

REMARKS/ARGUMENTS

This reply is fully responsive to the Office Action dated 27 JULY 2006, and is filed within six - (6) months following the mailing date of the Office Action. The

5 Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed. The method of payment and fees for petition fee due in connection therewith is enclosed.

10 **Disclosure/Claims Status Summary:**

This application has been carefully reviewed in light of the Office Action of July 27, 2006, wherein:

A. Claims 1-16, 18-24, 29-40, 42-46, and 49 were rejected under 35 U.S.C. § 102(e) as being anticipated by Willebrand et al.;

15 B. Claims 1, 5, 6, 15, 16, 18, and 23-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Perdue et al., in view of Taglione et al., or Nakamura;

C. Claims 10, 12, 14, and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Perdue et al., in view of Taglione et al., or Nakamura, and in further view of Vollert et al.;

20 D. Claims 11 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Perdue et al., in view of Taglione et al., or Nakamura, and in further view of Vollert et al., or Shibuya;

E. Claims 17 and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Willebrand et al., in view of Driessen;

25 F. Claims 25-28, 47-48, and 50-51 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Willebrand et al., in view of Medved et al., or Bloom;

G. Claims 1-5, 8, 9, 11, 15, 18-21, 24-26, 29, 30, 32, 33, 35, 39, 42, 43, 45, and 49-51 were rejected under 35 U.S.C. § 102(e) as being anticipated by Acampora;

30 H. Claims 6, 7, 13, 16, 23, 27, 28, 31, 37, 40, and 46-48 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Acampora in view of Kavehrad;

- I. Claims 10, 12, 22, 34, 36, and 44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Acampora in view of Vollert;
- J. Claims 14 and 38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Acampora in view of Kavehrad, and in further view of Vollert;
- 5 K. Claims 17 and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Acampora in view of Driessen et al.;
- L. Claims 1-5, 8-12, 15, 18-22, and 24-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Vollert in view of Acampora;
- M. Claims 6, 7, 13, 14, 16, 23, 27, and 28 were rejected under 35 U.S.C. § 103(a) as
10 being unpatentable over Vollert in view of Acampora, and in further view of Kavehrad;
- N. Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Vollert in view of Acampora, and in further view of Driessen et al.;
- O. Claims 1-5, 8, 9, 11, and 18-21 were rejected under 35 U.S.C. § 103(a) as being
15 unpatentable over Sato in view of Acampora; and
- P. Claims 1-5, 8, 9, 11, and 18-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Zavrel in view of Acampora.

20 Please note that, in order to facilitate the reading of this Office Action Response, **the Applicants have indented all the statements submitted by the Applicants responding to the Examiner's statements (non-indented) presented on the Office Action dated 27 JULY 2006.**

Claim Rejections - 35 USC § 102(e)

- 25 In section 3 of the current office action, the Examiner rejected Claims 1-16, 18-24, 29-40, 42-46, and 49 under 35 U.S.C. § 102 (e) as being anticipated by Willebrand et al. (US Pat. No. 6,763,195, hereinafter referred to as the "Willebrand patent").

Examiner's rejection of Claim 1

- 30 The Examiner stated that regarding Claim 1, the Willebrand patent teaches a node (referring to element 20 in Figure 3) incorporating hybrid radio frequency and optical

wireless communication links (referring to element 26 and 28 in Figure 3), the node comprising: at least one laser portion (referring to element 56 in Figure 3) for transmitting data (referring to column 8, lines 32-55); at least one radio frequency portion (referring to element 58 in Figure 3) for transmitting data; a data receiver (referring to element 60 in Figure 3) for receiving data from a data source (referring to column 8, lines 32-55); and a controller (referring to element 62 in Figure 3) configured to receive data from a data source and connected with the laser portion and the radio frequency portion to allocate portions of the data to be transmitted through the laser portion and the radio frequency portion (referring to column 10, lines 43-47, and column 13, lines 51-65).

Examiner's rejection of Claim 18

Regarding Claim 18, the Examiner stated that the Willebrand patent teaches a network (referring to element 20 in Figure 1) of a plurality of nodes (referring to elements 22 and 24 in Figure 1), wherein each node (referring to element 22 in Figures 1 and 3) includes: at least one laser portion for transmitting data (referring to element 56 in Figure 3); at least one radio frequency portion for transmitting data (referring to element 58 in Figure 3); a data receiver for receiving data from a data source (referring to element 60 in Figure 3); and a controller (referring to element 127 in Figure 5) configured to receive data from a data source and connected (referring to element 72 in Figure 3) with the laser portion (referring to element 56 in Figure 3) and the radio frequency portion (referring to elements 58 and 80 in Figure 3) to allocate portions of the data to be transmitted through the laser portion or the radio frequency portion (referring to column 14, lines 54-64).

As to the Applicant's arguments filed on MAY 5, 2006 with respect to Claims 1 and 18

The Examiner stated that, "as to the Applicant's arguments filed on 5/5/06 with respect to Claims 1 and 18 have been fully considered but they are not persuasive."

Specifically, the Examiner stated that the Applicants argued that the Willebrand patent does not specifically teach a laser portion. Then, the Examiner stated that

the Willebrand patent clearly states that “**laser** beam projects in a straight line between the communication points” (emphasis added) (referring to column 1, lines 66-67), and that “free space optical communication technology (referring to column 4, lines 45-52) preferably **laser** systems ... to achieve a wireless

5 terrestrial hybrid laser/microwave communication link for the communication data between two communication end-points of the hybrid link (referring to element 20 of Figure 1) at stations (referring to elements 22 and 24 of Figure 1)” (emphasis added). The Examiner further stated that the Willebrand patent (referring to column 4, lines 60-62) clearly states that “an optical signal, such as

10 laser beam, is projected in an optical path 26” (emphasis added). Consequently, the Examiner concluded that the Willebrand patent does teach a laser portion.

Furthermore, the Examiner stated that the Applicants argued that the Willebrand patent does not expressly or inherently specify the use of a data source. Next, the

15 Examiner stated that almost the whole patent of the Willebrand patent discloses transmission of **data** via either the IR link or the RF link or both. Then, the Examiner concluded that “of course there must be a data source for generating the data.”

The Examiner further stated that the Willebrand patent discloses (referring to column 5, lines 29-32) that the I/O signal paths (referring to elements 32 and 34 in Figure 1) may be

20 any **source** or delivery path of **data** signal in the communication network or system (emphasis added). Then, the Examiner stated that the Willebrand patent does teach a data source.

25 In addition, the Examiner stated that the Applicants argued that the Willebrand patent does not teach **allocating portions of data** to be transmitted through the laser portion and the radio frequency portion. The Examiner further stated that the Willebrand patent teaches (referring to lines 4-7 of the abstract) that “the **optical link** provides the primary path for the **data**, and the **RF link** provides a concurrent or backup path for the

30 network data” (emphasis added). The Examiner stated that the Willebrand patent teaches (referring to column 1, lines 26-31) that “for **communicating data** through a

communication link having both a free-space **optical path** and a parallel wireless **RF path**. The **data is transmitted over the higher capacity optical path** when..., and the **data is transmitted over the RF path**" (emphasis added).

- 5 The Examiner further stated that the Willebrand patent teaches (referring to column 2, lines 60-63) that "**communicating the data** in an optical signal transmitted **through a free-space optical path...** and **communicating the data** in a radio frequency (RF) signal transmitted **through a free-space RF path**" (emphasis added), and that the Willebrand patent teaches (referring to column
- 10 3, lines 29-39) that "a free-space **optical link**...for transmitting and receiving an optical signal therebetween containing the **data...** a free-space **RF link** portion... for transmitting and receiving an RF signal therebetween containing the **d a t a**" (emphasis added).
- 15 In addition the Examiner stated that the Willebrand patent teaches (referring to column 3, lines 52-60) that "the **data to be transmitted over the optical and RF paths...** A switch within the station...routes **the data** between the optical link ... and **routes the data** between **the RF link**" (emphasis added), and that the Willebrand patent teaches (referring to column 4, lines 65 to column 5, line 1) that "**Data contained in the optical**
- 20 **and RF signals is thereby communicated** between the two stations" (emphasis added). The Examiner further stated that the Willebrand patent teaches (referring to column 5, lines 21-29) that "the optical path (referring to element 26 in Figure 1) serves ... communication path for the data transmitted between the master and slave stations ... RF path (referring to element 28 in Figure 1) also serves ... data communication path in a
- 25 standby mode of operation ... In the standby mode, the RF path carries the data" (emphasis added), and that the Willebrand patent teaches (referring to column 6, lines 9-22) that "**the data is communicated through the RF path** (referring to element 28 in Figure 1) ... to allow reliable optical **communication of data in the optical path** (referring to element 26 in Figure 1) "(emphasis added).

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Furthermore, the Examiner stated that the Willebrand patent teaches (referring to column 6, lines 39-40) that “the optical and RF network **data signals in the optical and RF paths**”(emphasis added), and that (referring to column 9, lines 13-42) Willebrand patent also teaches that “the master and slave TIUs (referring to element 60 and 68 in Figure 3) **route the data** to their respective master and slave OTs (referring to element 56 and 64 in Figure 3) across **an optical data** ...the master and slave TIUs (referring to element 60 and 68 in Figure 3) **route data through** the respective master and slave **RF transceivers** (referring to element 58 and 66 in Figure 3)” (emphasis added). The Examiner stated that the Willebrand patent also teaches (referring to column 14, lines 35-39) that “in another alternative implementation ... both **the optical path** (referring to element 26 in Figure 1) **and the RF path** (referring to element 28 in Figure 1) **are fully utilized simultaneously for communication of data**”(emphasis added), and that the Willebrand patent teaches (referring to column 14, lines 55 to 65) that “**routes the data through the optical data I/O bus** (referring to element 72 in Figure 3)... **routes the data through the RF link portion**”(emphasis added), and that (referring to column 16, lines 34-35) “for **routing the data through the appropriate optical or RF path**” (emphasis added).

Then, the Examiner concluded that the Willebrand patent does teach allocating portions of data to be transmitted through the laser portion and the radio frequency portion.

Regarding the rejections of Claims 1 and 18 over the Willebrand patent

The Applicants strongly disagree with the Examiner’s statement that “the Willebrand patent does teach allocating portions of data to be transmitted through the laser portion and the radio frequency portion.”

Addressing the requirements of anticipation, the Federal Circuit stated that, “There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention” *Scripps Clinic & Research Found. V. Genentech Inc.*, 927 F.2d 1576 (Fed. Cir. 1991). Furthermore, the Federal Circuit stated that

“Anticipation requires that every element of the claims appear in a single reference ...” *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264 (Fed. Cir. 1991), and that “Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.”

5 *W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983). In addition, the Federal Circuit stated that under 35 U.S.C. § 102, “anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim” *Lindemann Maschinenfabrik GmbH v.*
10 *American Hoist & Derrick Co.*, 730 F.2d 1452 (Fed. Cir. 1984).

Therefore, in order to establish a prima facie case of anticipation the Examiner must set forth an argument that provides (1) a single reference (2) that teaches or enables (3) each of the claimed elements (as arranged in
15 the claim) (4) either expressly or inherently and (5) as interpreted by one of ordinary skill in the art. All of these factors must be present, or a case of anticipation is not met.

Independent Claims 1 and 18 of the present invention recite the limitation
20 “to allocate portions of the data to be transmitted.” The Applicants submit that this limitation is not taught, disclosed, or suggested in the Willebrand patent.

The Applicants submit that the Willebrand patent does not teach to
25 allocate portions (emphasis added) of the data to be transmitted through the laser portion and the radio frequency portion, as claimed in Claims 1 and 18. In contrast with the present invention, the Willebrand patent specifically teaches that “the optical link provides the primary path for the data, and the RF link provides a concurrent or backup path for the network
30 data” (referring to the abstract lines 4-7). The Willebrand patent also states that “the RF link portion communicates in parallel with the optical

link portion of the hybrid link” (referring to column 8 lines 50-52). The Applicants submit that, in contrast with the present invention which allocates **portions** of the data to be transmitted through the laser portion and the radio frequency portion, the Willebrand patent **transmits all of the data** (emphasis added) through the optical link and the RF link, either by using a switch as quoted by the Examiner above “a switch within the station ... **routes the data** between the **optical link** ... and **routes the data** between the **RF link**” (referring to column 3 lines 52-60), or by using an alternative implementation as quoted by the Examiner above “... both the optical path and the RF path are fully utilized simultaneously **for communication of data**” (referring to column 14 lines 55-65).

Therefore, the Applicants submit that on all the sections of the Willebrand patent quoted by the Examiner on the Office Action dated July 27, 2006, and reiterated above (referring to pages 5 to 7 of this Office Action response), there is not a single mention of only **allocating portions of the data** to be transmitted. The Applicants submit that the Willebrand patent only mentions transmitting data through a RF path and/or through an optical path, but the Willebrand patent does not teach or even suggest to allocate or transmit only portions of the data (emphasis added).

Thus, the Willebrand patent does not teach, disclose, or suggest to transmit **only portions of the data**. The Applicants respectfully request that the Examiner indicate exactly where in the Willebrand patent the Examiner finds that the limitation “allocate portions of the data to be transmitted” is taught, disclosed, or suggested.

Therefore, the Applicants submit that the Willebrand patent, in combination with the knowledge of one skilled in the art, does not teach,

disclose, or suggest, expressly or inherently, all of the claimed limitations of Claims 1 and 18.

Because the Willebrand patent fails to teach all the elements of Claims 1 and 18, arranged exactly as in Claims 1 and 18, for reasons discussed above, the Applicants respectfully request that the Examiner withdraw this rejection of Claims 1 and 18.

Examiner's rejection of Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45

Regarding Claims 3-4, 7, and 9, the Examiner stated that the Willebrand patent teaches that the controller is configured to receive environmental information and wherein the portions of the data to be transmitted through the laser portion and the radio portion are adjusted by the controller based on the environmental information (referring to column 2, lines 31-45, column 10, lines 18-20, column 11, lines 63-67, and column 12, lines 1-13).

Regarding Claims 20-21, 29, 33, 42, and 45, the Examiner stated that the Willebrand patent teaches that the controller of each node is configured to receive environmental information, and wherein the portion of data to be transmitted through the laser portion or the radio frequency portion are adjusted by the controller based on the environmental information (referring to column 2, lines 31-45, column 10, lines 18-20, column 11, lines 63-67, and column 12, lines 1-13). As to Claims 29 and 42, the Examiner further stated that these Claims require similar limitations as the ones previously recited by the Examiner in Claim 18 above.

As to the Applicant's arguments filed on MAY 5, 2006 with respect to Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45

As to the Applicant's arguments filed on 5/5/06 with respect to Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45, the Examiner stated that the arguments have been fully considered but that the Examiner found these arguments not persuasive.

Specifically, the Examiner stated that the Applicants argued that the Willebrand

patent does not teach that the controller is configured to receive environmental information to further transmit the data through the laser portion and the RF portion based on environmental information. Next, the Examiner stated that the Willebrand patent teaches (referring to lines 7-11 of the abstract) that “When **atmospheric**
5 **conditions** degrade the **optical link** to the point at which optical data transmission fails, the hybrid communication link switches to **the RF link** to maintain availability of **data communication**”(emphasis added), and that the Willebrand patent teaches (referring to column 1, lines 28-34) that “The **data is transmitted over the higher capacity optical path when** favorable free-space **atmospheric conditions** prevail, and **the data is**
10 **transmitted over RF path when free-space atmospheric conditions** have degraded” (emphasis added).

The Examiner further stated that the Willebrand patent teaches (referring to column 2, line 65 to column 3, line 3) that “**The optical link is used to transmit the data** whenever
15 there is a benefit to **using the optical path, and the RF link is used whenever atmospheric conditions in the optical path causes the optical path to fail or degrade** the transmission of the optical signals” (emphasis added), and that the Willebrand patent teaches (referring to column 3, lines 45-47) that “when **the optical path fails or degrades because of atmospheric influences, the data is routed for transmission by**
20 **the RF transceivers over the RF path**” (emphasis added). Then the Examiner stated that the Willebrand patent teaches (referring to column 5, lines 22-42) that “The **optical path** (referring to element 26 in Figures 1 and 3) serves as the main or preferred communication path for the **data** transmitted ... **The RF path** (referring to element 28 in Figures 1 and 3) also serves as a reliable backup **data** communication path ... **RF path**
25 (referring to element 28 in Figures 1 and 3) **carries the data because** the optical path (referring to element 26 in Figures 1 and 3) has failed in transmitting... **due to the degrading atmospheric or other influences in such as the light refractive influences of rain, fog, mist, snow, dust, or other severe weather conditions**” (emphasis added).

30 Furthermore, the Examiner stated that the Willebrand patent teaches (referring to column 11, line 64 to column 12, line 12) that “**Under severe weather conditions**, for example,

either the master or slave.... switch the data communication to the RF link portion”
(emphasis added), and that (referring to column 14, lines 7-12) “the **switching** from the
active to standby modes occurs **automatically** upon optical beam failure or degradation
due to severe weather condition” (emphasis added).

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Then, the Examiner concluded that the Willebrand patent does teach that the controller is
configured to receive environmental information to further transmit data through the laser
portion and the RF portion base on environmental information.

10 **Regarding the rejections of Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45 over the**
Willebrand patent

The Applicants strongly disagree with the Examiner’s statement that
“the Willebrand patent does teach that the controller is configured to
15 receive environmental information to further transmit data through the
laser portion and the RF portion base on environmental information.”

Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45 of the present invention recite
the limitations that “the controller is configured to receive environmental
20 information and wherein the portions of the data to be transmitted through
the laser portion and the radio portion are adjusted by the controller based
on the environmental information.” The Applicants submit that these
limitations are not taught, disclosed, or suggested in the Willebrand patent.

25 The Applicants respectfully refer the Examiner to the paragraphs quoted
above by the Examiner corresponding to (lines 7-11 of the abstract)
“When **atmospheric conditions degrade the optical link to the point at**
which optical data transmission fails, the hybrid communication link
switches to the RF link;” and (referring to column 14, lines 7-12) “the
30 **switching** from the active to standby modes **occurs automatically upon**
optical beam failure or degradation due to severe weather condition.”

The Applicants submit that the Willebrand patent waits until the optical signal is degraded or lost before switching the transmission from the optical link to the RF link, as clearly seen from the paragraphs on the Willebrand patent cited above by the Examiner.

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The Willebrand patent specifically teaches that under severe weather conditions, the optical transceiver **may detect degradation of the optical signal from the optical path**, and in this situation, if the optical transceiver detects optical beam degradation, the optical transceiver sets the optical failure field and routes the control packets to the RF transceiver (referring to column 11, lines 63-67, and column 12, lines 1-13). The Applicants submit that the Willebrand patent uses a measurement of the optical signal degradation to switch the transmission from the optical link to the RF link. However, **the Willebrand patent does not teach specifically receiving**

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environmental information which is then used by the controller to allocate portions of the data to be transmitted through the laser portion and the radio portion based on the environmental information, as claimed in Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45.

An advantage of the present invention is that it **may allocate portions of the data to be transmitted through the radio frequency portion based on received environmental information prior to the data being degraded**, while the Willebrand patent waits until optical signal degradation is detected or until **the optical data transmission fails before routing the control packets to the RF transceiver**.

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Therefore, the Applicants submit that using the Willebrand patent will cause parts of the data to be lost due to optical signal degradation before the Willebrand patent switches to the RF link transmission, while the present invention may predict the environmental conditions ahead by monitoring environmental information, and the present invention will

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switch to RF transmission before the optical signal gets degraded by the weather and some of the data gets lost during the transmission.

Therefore, **the Applicants strongly submit that the Willebrand patent switches transmissions between the optical link and the RF link based on the degradation of the optical signal, which may or may not be degraded due to the weather, while the present invention switches transmissions between the laser portion and the radio frequency portion based on the environmental information received by the controller, and not based on the signal degradation.**

Furthermore, **the Applicants submit that the Willebrand patent does not have a controller that is configured to receive environmental information, as claimed in the present invention, and that the Willebrand patent only monitors the optical signal degradation and does not monitor the environmental information around the signal being transmitted.** The Applicants submit that the Willebrand patent does not use any environmental inputs in order to control the transmissions through the optical links and RF links.

The Applicants respectfully request that the Examiner indicate exactly where in the Willebrand patent that the Examiner finds that the limitations of **“a controller configured to receive environmental information”** and **“wherein the portions of the data to be transmitted through the laser portion and the radio portion are adjusted by the controller based on the environmental information”** are taught, disclosed, or suggested.

Because the Willebrand patent fails to teach all the elements of Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45, arranged exactly as in Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45, for reasons discussed above, the Applicants

respectfully request that the Examiner withdraw this rejection of Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45.

Regarding the rejections of Claims 33 and 45 over the Willebrand patent

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The Applicants strongly disagree with the Examiner's statement that
"the Willebrand patent does teach that the controller is configured to receive environmental information to further transmit data through the laser portion and the RF portion base on environmental information."

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Claims 33 and 45 specifically claim that the environmental information consists of weather-related data, and wherein the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the weather-related data.

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The Applicants submit that no where in the Willebrand patent can be found any reference to environmental information consisting of weather-related data which is specifically being used to adjust a

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controller. The Applicants refer the Examiner to the Willebrand patent's paragraph cited by the Examiner above (referring to column 5 lines 22-42) wherein the Willebrand patent teaches that a RF path (referring to element 28 in Figures 1 and 3) carries the data because the optical path (referring to element 26 in Figures 1 and 3) has failed in transmitting... due to the degrading atmospheric or other influences in such as the light refractive influences of rain, fog, mist, snow, dust, or other severe weather

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conditions." **The Applicants strongly submit that the Willebrand patent only mentions the environmental conditions as possible causes for the optical path failure. However, the Willebrand patent does not specifically monitor any of these environmental conditions and the**
Willebrand patent does not use any specific information on
environmental conditions to switch the transmission from the optical

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link to the RF link, since the Willebran patent only waits for the optical link transmission to fail in order to switch transmission to the RF link.

The Applicants strongly disagree with the Examiner's statement that

5 "the Willebrand patent does teach that the controller is configured to receive environmental information to further transmit data through the laser portion and the RF portion base on environmental information."

Therefore, the Applicants respectfully request that the Examiner indicate exactly where in the Willebrand patent the Examiner finds that the

10 limitation of "the environmental information consists of weather-related data, and wherein the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the weather-related data" is taught, disclosed, or suggested.

15 Therefore, the Applicants submit that the Willebrand patent, in combination with the knowledge of one skilled in the art, does not teach, disclose or suggest, expressly or inherently all of the claimed limitations of Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45, as arranged in Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45.

20 Because the Willebrand patent fails to teach all the elements of Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45, arranged exactly as in the claims, for reasons discussed above, the Applicants respectfully request that the Examiner withdraw this rejection of Claims 3-4, 7, 9, 20-21, 29, 33, 42, and 45.

Examiner's rejection of Claims 29 and 42

Regarding Claims 29 and 42, the Examiner stated that Claims 29 and 42 further require similar limitations, as the limitations previously recited in Claim 18 above.

Regarding the rejections of Claims 29 and 42 over the Willebrand patent

The Applicants strongly disagree with the Examiner's statement that
"the Willebrand patent does teach that the controller is configured to
receive environmental information to further transmit data through the
laser portion and the RF portion base on environmental information."

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As previously stated by the Examiner, Claims 29 and 42 include the same
limitations as Claims 1 and 18. Mainly, Claims 29 and 42 recite the
limitations that "at least one laser portion for transmitting data; a data
receiver for receiving data from a data source; to allocate portions of the
data to be transmitted." In addition, **Claims 29 and 42 further recite the**
limitations that "a controller configured to receive environmental
information from the environment and data from the data source, and
wherein the portions of the data to be transmitted are adjusted by the
controller based on the environmental information." As previously
stated, the Applicants submit that these limitations are not taught,
disclosed, or suggested in the Willebrand patent.

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Therefore, the Applicants refer the Examiner to the comments above
regarding Claims 1, 18, 3-4, 7, 9, 20-21, 29, 33, 42, and 45. For the
reasons given above, **the Applicants submit that the Willebrand patent**
does not teach or disclose allocating portions of the data, a controller
configured to receive environmental information, and adjusting the
data transmission based on the environmental information received
by the controller instead of based on the signal degradation.

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Therefore, the Applicants submit that the Willebrand patent, in
combination with the knowledge of one skilled in the art, does not teach,
disclose or suggest, expressly or inherently, all of the claimed limitations
of Claims 29 and 42.

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Because the Willebrand patent fails to teach all the elements of Claims 29 and 42, arranged exactly as in Claims 29 and 42, for reasons discussed above, the Applicants respectfully request that the Examiner withdraw this rejection of Claims 29 and 42.

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Examiner's rejections of Claims 2, 5-6, 8, 10-17, 19, 22-28, 30-32, 34-41, 43-44, and 46-51

Regarding Claims 2 and 8, the Examiner further stated that the Willebrand patent teaches that the controller is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion or radio frequency portion (referring to column 13, lines 51-58, column 15, lines 36-40 and 124, and Figure 5).

15 **Regarding Claims 2 and 8, the Applicants refer the Examiner to page 21 of this response.**

Regarding Claim 5, the Examiner further stated that the Willebrand patent teaches that the laser portion is configured to both transmit and receive and wherein the radio frequency portion is configured to both transmit and receive (referring to column 6, lines 28-30, and column 10, lines 14-16).

20 **Regarding Claim 5, the Applicants refer the Examiner to page 21 of this response.**

25 Regarding Claims 6, 13 and 16, the Examiner stated that the Willebrand patent teaches that the laser portion and the radio frequency portion are configured to transmit in multiple channels (referring to column 1, lines 23-35, column 5, lines 19-21, column 6, lines 27-31, and Figure 2).

30 **Regarding Claims 6, 13, and 16, the Applicants refer the Examiner to page 21 of this response.**

Regarding Claims 10, 12 and 14, the Examiner stated that the Willebrand patent teaches that the laser portion and the radio frequency portion have a transmit and receive strength, and wherein the controller is configured to monitor the transmit and receive strengths, and wherein the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on their transmit and receive strengths (referring to column 13, lines 55-65, and column 14, lines 49-64).

10 **Regarding Claims 10, 12, and 14, the Applicants refer the Examiner to page 21 of this response.**

Regarding Claim 11, the Examiner stated that the Willebrand patent teaches that the controller includes a plurality of latches and a logic device, wherein the plurality of latches and logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion (referring to column 14, lines 46-67). The Examiner further stated that it is well known that a controller can include latches and logic devices to provide control and adjustment functions.

20 **Regarding Claim 11, the Applicants refer the Examiner to page 21 of this response.**

Regarding Claim 15, the Examiner stated that the Willebrand patent teaches that the laser portion and the radio frequency portion are configured to transmit and receive in tandem, whereby the node may be configured to provide a hybrid serial link to permit tailored radio frequency or optical network connections (referring to column 4, lines 58-67, and column 5, lines 1-21).

30 **Regarding Claim 15, the Applicants refer the Examiner to page 21 of this response.**

Regarding Claims 19, 32 and 43, the Examiner stated that the Willebrand patent teaches that the controller of each node is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion or the radio frequency portion (referring to column 13, lines 51-58, column 15, lines 36-40 and 124 in Figure 5).

Regarding Claims 19, 32, and 43, the Applicants refer the Examiner to page 21 of this response.

Regarding Claims 22, 30, 34, 36, 38 and 44, the Examiner stated that the Willebrand patent teaches that the laser portion and the radio frequency portion of each node have transmit and receive strengths and wherein the controller is configured to monitor the transmit and receive strengths, wherein the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on their transmit and receive strengths (referring to 13, lines 55-65, and column 14, lines 49-64).

Regarding Claims 22, 30, 34, 36, and 44, the Applicants refer the Examiner to page 21 of this response.

Regarding Claims 23, 31, 37, 40, and 46, the Examiner stated that the Willebrand patent teaches the laser portion and the radio frequency portion of each node are configured to transmit in multiple channels (column 1, lines 23-35, column 5, lines 19-21, column 6, lines 27-31, and Figure 2).

Regarding Claims 23, 31, 37, 40, and 46, the Applicants refer the Examiner to page 21 of this response.

Regarding Claims 24, 39, and 49, the Examiner stated that the Willebrand patent teaches that the laser portion and the radio frequency portion are configured to transmit and receive in tandem, whereby the node may be configured to provide a

hybrid serial link to permit tailored radio frequency or optical network connections (referring to column 4, lines 58-67, and column 5, lines 1-21).

Regarding Claims 24, 39, 49, the Applicants refer the Examiner to page 21 of this response.

Regarding Claim 35, the Examiner stated that the Willebrand patent teaches that the controller includes a plurality of latches and a logic device, wherein the plurality of latches and logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion (referring to column 14, lines 46-67). The Examiner further stated that it is well known that a controller can include latches and logic devices to provide control and adjustment functions.

Regarding the rejections of Claims 2, 5-6, 8, 10-17, 19, 22-28, 30-32, 34-41, 43-44, and 46-51

Claims 2-17 are dependent upon Claim 1, Claims 19-28 are dependent upon Claim 18, Claims 30-41 are dependent upon Claim 29, and Claims 43-51 are dependent upon Claim 42. For the reasons given above, the Applicants submit that Claims 1, 18, 29, and 42 are patentable over the cited prior art. Therefore, the Applicants submit that Claims 2-17, 19-28, 30-41, and 43-51 are also patentable over the cited prior art at least based on their dependence upon an allowable base claim.

Claims Rejections - 35 USC § 103(a)

Examiner's rejections of Claims 1, 5, 6, 15, 16, 18 and 23-24 over the Perdue patent in view of the Taglione patent or the Nakamura patent

In sections 4 and 5 of the current office action, the Examiner rejected Claims 1, 5, 6, 15, 16, 18, and 23-24 under 35 U.S.C. § 103(a) as being unpatentable over Perdue et al. (US Pat. No. 6,529,556, hereinafter referred to as the "Perdue patent"), in view of Taglione et

al. (US Pat. No. 5,966,225, hereinafter referred to as the “Taglione patent”), or Nakamura (US Pat. No. 6,583,908, hereinafter referred to as the “Nakamura patent”).

Claims 1 and 18 rejections over the Perdue patent in view of the Taglione patent or the Nakamura patent

The Examiner stated that regarding Claims 1 and 18, the Perdue patent teaches a node (referring to element 10, Figure 1) incorporating hybrid radio frequency and optical wireless communication links (referring to column 2 lines 50-55), the node comprising: an IR portion (referring to element 16 in Figure 1) for transmitting data (referring to column 2 lines 15-17); a RF portion (referring to element 17 in Figure 1) for transmitting data (referring to column 2 lines 15-17); a data receiver (referring to element 20 in Figure 1) for receiving data from a data source (referring to column 2 line 16 and column 4 lines 10-17); and a controller (referring to element 14 in Figure 1) configured to receive data from a data source (referring to element 20 in Figure 1) and connected with the IR portion and the RF portion to allocate portions of the data to be transmitted through the IR portion and the RF portion (referring to column 2 lines 14-19, column 5 lines 39-47, and Figure 4).

However, the Examiner further noted that the Perdue patent differs from the claimed invention in that the Perdue patent does not specifically disclose that the IR portion is a laser. Furthermore, the Examiner stated that the Perdue patent further teaches that any one of a number of conventionally known IR transmitter arrangement may be used (referring to column 5, lines 23-25). The Examiner concluded that it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a laser for transmitting a data signal, since such concept is taught by the Taglione and Nakamura patents. The Examiner stated that the Taglione patent teaches an IR transceiver (referring to element 100 in Figure 3 and column 3, lines 47-56), wherein the IR emitter (referring to element 108 in Figure 3) can be a laser diode (referring to column 3, lines 53-54). The Examiner further stated that the Nakamura patent teaches infrared transmission/reception units (referring to elements 6a, 6b, 6c, in Figures 1a, 1b, and 2) to

transmit and receive light when performing data communication by a computer (referring to column 3, lines 3-10 and 1 in Figure 2).

Furthermore, the Examiner stated that the Nakamura patent teaches that laser light may be used for the infrared transmission/reception unit (referring to column 5, lines 10-15). Therefore, the Examiner concluded that it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a laser transmitter, as it is taught by the Taglione or Nakamura patents, for the IR portion in the data transmission system of the Perdue patent to generate a uniform, narrow, and relatively high power output light.

As to the Applicant's arguments filed on MAY 5, 2006 with respect to Claims 1 and 18

The Examiner stated that, "as to the Applicant's arguments filed on 5/5/06 with respect to Claims 1 and 18 have been fully considered but they are not persuasive."

Specifically, the Examiner stated that the Applicants argued that the Perdue patent does not teach transmitting portions of data through the laser portion and RF portion. Then, the Examiner stated that the Perdue patent teaches (referring to column 4, lines 18-20) "a controller (referring to element 14 in Figure 1) which receives the user input and generates an appropriate remote control signal," and that the Perdue patent further teaches (referring to column 4, lines 38-40) that "a **controller** (referring to element 14 in Figure 1) **applies the appropriate signals to the IR transmitter** (referring to element 16 in Figure 1) **and/or RF transmitter** (referring to element 17 in Figure 1) to send control signals to the device to be controlled."

Then, the Examiner concluded that the Perdue patent does teach allocating portions of data to be transmitted through the IR portion and the radio frequency portion.

Regarding the rejection of Claims 1 and 18 over the Perdue patent in view of the Taglione patent or the Nakamura patent

The Applicants strongly disagree with the Examiner's statement that
"the Perdue patent does teach allocating portions of data to be transmitted
through the IR portion and the radio frequency portion." Furthermore, the
Applicants can not find any reference to "allocating portions of data to be
transmitted" on the paragraph cited by the Examiner right above (referring
to column 4, lines 18-20 of the Perdue patent, and second paragraph on
this page).

As noted by MPEP 2143.03 to establish a *prima facie* case of obviousness,
all the claim limitations must be taught or suggested by the prior art. The
Applicants respectfully submit that the combination of the Perdue patent
with the Taglione patent and the Nakamura does not teach all of the claim
limitations of Claims 1 and 18. Specifically, **the Applicants assert that**
the combination does not teach, disclose, or suggest "a controller ... to
allocate portions of the data to be transmitted through the laser portion
and the radio frequency portion," as is claimed in Claims 1 and 18.

Specifically, the Examiner stated that "the Perdue patent teaches a
controller (referring to 14 in Figure 1) that receives data from a data
receiver input device (referring to 20 in Figure 1) which receives data
from a data source such as a keypad (referring to column 2, lines 13-16,
and column 4, lines 14-17), and wherein the controller (referring to 14 in
Figure 1) generates appropriate signal format in response to data received,
and applies that signal format to both an IR transmitter and a RF
transmitter (referring to column 2, lines 16-19)." Therefore, the
Applicants reiterate that (referring to column 2, lines 14-19) the Perdue
patent discloses a "controller that generates the appropriate signal format
in response to a user key press and applies that signal format to both the
IR and the RF signal transmitter simultaneously." **The Applicants**
reiterate that the Perdue patent transmit the same complete signal

through both the IR transmitter and the RF transmitter
simultaneously (referring to col. 3 lines 30-37) in a time multiplexed
manner, generating a complete IR signal corresponding to the user
input and transmitting this complete IR signal, and generating a
complete RF signal corresponding to the same user input and
transmitting this RF signal. Therefore, the Applicants strongly submit
that the Perdue patent does not transmit portions of the data to be
transmitted through the laser portion and the radio frequency portion as
the present invention claims. Instead, the Perdue patent transmits all the
data (same appropriate signal) to both the IR and the RF signal transmitter
without separating portions of the signal as claimed in the present
invention.

Furthermore, the Applicants respectfully disagree with the Examiner's
statements that "Figure 1 and Figure 4 of the Perdue patent show a
controller (referring to 14 in Figure 1) that can allocate portions of data to
IR transmitter (referring to 16 in Figure 1) and RF transmitter (referring to
17 in Figure 1), that Figure 4 of the Perdue patent shows portions of data
transmitted by the IR transmitter during time interval (referring to 70 in
Figure 1), and portions of data transmitted by the RF transmitter during
the time interval (referring to 72 in Figure 1), and that as a result, a
controller (referring to 14 in Figure 1) can allocate portions of data for
transmission by the IR and RF transmitters."

The Applicants respectfully refer the Examiner to the following definition
of "multiplexing," wherein the word "multiplexing" is defined by the
Encarta® World English Dictionary, North American Edition as, the
sending of two or more signals along one communication channel. **The
Applicants submit that Figure 4 of the Perdue patent illustrates the
time multiplexed transmission of the same complete signal (not a
portion of the signal) through both the IR transmitter and the RF**

transmitter, wherein the same signal information is transmitted by the controller communication channel over and over in alternating time intervals to the IR transmitter and RF transmitter until the user input changes. The Applicants further submit that Figure 4 of the Perdue patent illustrates the time intervals when the controller sends a complete particular remote control signal in IR form to the IR transmitter during the time intervals 70 and 74 (referring to elements 70 and 74 in Figure 4), and a complete particular remote control signal in RF form to the RF transmitter during the time interval 72 (referring to element 72 in Figure 4).

The Applicants further state that the Perdue patent clearly transmits both an RF signal and an IR signal corresponding to a user input in a time multiplexed manner (referring to col. 5, lines 39-51) without separating the IR and RF signals into portions. The Perdue patent transmits the complete IR signal during a time interval (referring to 70, Figure 4), then transmits the complete RF signal during the following time interval (referring to 72, Figure 4), and the Perdue patent continues to repeat the transmitting sequence alternating between transmitting the complete IR signal and the complete RF signal for as long as the input from the user continues to be the same, "... in this manner, the IR and RF signals are alternated and transmitted for as long as the user input is provided at the input device." Thus, the Perdue patent transmits the complete IR signal during time intervals 70, 74, 78, and so on (referring to Figure 4 and Figure 5) and the Perdue patent transmits the complete RF signal during the time intervals 72, 76, 80, and so on (referring to Figure 4 and Figure 5) until the input changes, wherein both IR and RF signals correspond to the same input signal.

Therefore, the Perdue patent never discloses or even suggests transmitting only a portion of the data through the radio signal

sending circuit (referring to 17, Figure 1) and the IR sending circuit (referring to 16, Figure 1). **In contrast, the present invention claims in Claims 1 and 18 “a controller configured to ... allocate portions of the data to be transmitted through the laser portion and the radio frequency portion,”** not sending the same complete signal in IR form and RF form by alternating time intervals between the transmission of the complete signal in IR form and the transmission of the complete signal in RF form as is taught by the Perdue patent.

In response to the Examiner’s arguments that “transmitting only a portion of data through the radio signal sending circuit or the IR sending circuit” it is not recited in the rejected claims, and that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993), **the Applicants strongly disagree with this statement by the Examiner, since Claims 1 and 18 clearly disclose “to allocate portions of the data to be transmitted.”** Therefore, the Applicants believe that in light of the new arguments this is no longer an issue.

As previously stated and repeated here for clarity, the Applicants submit that Figure 4 in the Perdue patent illustrates different time intervals, and that Figure 4 does not illustrate different portions of a data signal. In addition, the Applicants submit that the paragraph newly quoted above by the Examiner (referring to column 4, lines 38-40) only discloses a controller that applies the appropriate signals to the IR transmitter and/or the RF transmitter, but **this controller never discloses allocating portions of the data to be transmitted, as the Examiner mistakenly suggested. If the Examiner continues to maintain his rejection, the Applicants respectfully request that the Examiner further clarify exactly where in the Perdue or Taglione or Nakamura patents does**

the Examiner find that the limitation of “allocate portions of the data to be transmitted” is taught, disclosed, or suggested (emphasis added).

For the foregoing reasons the Applicants respectfully believe that Claims 1 and 18, as written, are patentable over the combination of prior art references and respectfully requests that these rejections of Claims 1 and 18 under 35 USC §103(a) be withdrawn.

Regarding the rejections of Claims 5, 6, 15, 16 and 23-24 over the Perdue patent in view of the Taglione patent or the Nakamura patent

Referring to Claim 5, the Examiner stated that the Perdue patent teaches that the IR portion is configured to both transmit and receive and that the RF portion is configured to both transmit and receive (referring to column 2, lines 51-55, column 9, lines 8-24, and column 10, lines 13-34).

Regarding Claim 5, the Applicants refer the Examiner to page 29 of this response.

Referring to Claims 6 and 23, the Examiner stated that the Perdue patent teaches that the IR portion and the RF portion are configured to transmit and receive in multiple channels (referring to column 6, lines 23-34 and 76, 78 and 80, 82, in Figure 5).

Regarding Claims 6 and 23, the Applicants refer the Examiner to page 29 of this response.

Referring to Claims 15 and 24, the Examiner stated that the Perdue patent teaches that the IR portion and the RF portion are configured to transmit and receive in tandem (referring to column 2, lines 15-19).

Regarding Claims 15 and 24, the Applicants refer the Examiner to page 29 of this response.

Referring to Claim 16, the Examiner stated that the Perdue patent teaches that the IR portion and the RF portion are configured to transmit and receive in multiple channels (referring to column 6, lines 23-34 and 76, 78 and 80, 82, in Figure 5).

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Regarding Claims 5, 6, 15, and 16, the Applicants refer the Examiner to the paragraph below.

Claims 5, 6, 15, and 16 are dependent upon Claim 1, and Claims 23-24 are dependent upon Claim 18. For the reasons given above, the Applicants submit that Claims 1 and 18 are patentable over the cited prior art.

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Therefore, the Applicants submit that Claims 5, 6, 15, 16, 23, and 24 are also patentable over the cited prior art at least based on their dependence upon an allowable base claim.

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Claims Rejections - 35 USC§ 103(a)

Examiner's rejections of Claims 10, 12, 14, and 22 over the Perdue patent in view of the Taglione patent or the Nakamura patent and in further view of the Vollert patent

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In section 6 of the current office action, the Examiner rejected Claims 10, 12, 14, and 22 under 35 U.S.C. § 103(a) as being unpatentable over the Perdue patent in view of the Taglione patent, or the Nakamura patent, and in further view of Vollert (German Patent No: DE 44 33 896 CI, hereinafter referred to as the "Vollert patent").

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In particular the Examiner stated that, regarding Claims 10, 12, 14, and 22, the modified data transmission system of the Perdue and Taglione or Nakamura patents differ from the claimed invention in that the Perdue and the Taglione or Nakamura patents do not disclose the controller is configured to monitor the transmit and receive strengths. The Examiner further stated that the Vollert patent teaches bi-directional transmission and reception of information over radio link (referring to FUS in Figure 1) or optical link (referring to IUS in Figure 1) based on verification of the transmission quality of different paths (referring to translation page 5, last paragraph and page 6, first

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paragraph) by a controller (referring to PST in Figure 1) and switching (referring to translation page 6, lines 10-12) from one link to the other based on the evaluation and measurement results (referring to translation page 6, lines 3-18). The Examiner then concluded that it would have been obvious to a person of ordinary skill in the art to
5 incorporate a controller such as the one of the Vollert patent for the controller in the modified data transmission system of the Perdue and the Taglione patents to verify the transmission quality of the transmission paths.

10 **Regarding the rejections of Claims 10, 12, 14, and 22 over the Perdue patent in view of the Taglione patent or the Nakamura patent in further view of the Vollert patent.**

Claims 10, 12, and 14 are dependent upon Claim 1 and Claim 22 is dependent upon Claim 18. Therefore, the Applicants respectfully refer the Examiner to the comments above regarding Claims 1 and 18. As stated
15 before and repeated here for clarity, the Perdue and Taglione patents never disclose or even suggest transmitting only portions of the data through the radio signal sending circuit and the IR sending circuit. Therefore, the Applicants submit that these Claims 10, 12, 14, and 22 are patentable over the cited prior art at least through their dependence upon an allowable base
20 claim.

Furthermore, as noted by MPEP 2143.03, to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art. The Applicants respectfully submit that the combination of
25 the Vollert patent with either the Perdue or Taglione patent does not teach all of the claim limitations of Claims 1 and 18. Specifically, the Applicants assert that the combination does not teach, disclose, or suggest “a controller configured to received data from a data source and connected with the laser portion and the radio frequency portion to allocate portions
30 of the data to be transmitted through the laser portion and the radio frequency portion,” as is claimed in Claims 1 and 18.

The Applicants respectfully note that the Vollert patent never discloses or even suggests transmitting only “a portion” of the data through the IR portion for transmitting data and through the RF portion for transmitting data. In contrast with the present invention, the
5 Vollert patent clearly transmits data to only either the radio transmission path or the infrared transmission path, as claimed in Claim 1 of the Vollert patent (referring page 6, Claim 1, and page 1, lines 28-32) “... depending on the result of the verification, the exchange of information is directed
10 over the bidirectional infrared transmission path (IUS) or the bidirectional radio transmission path (FUS) ...” Therefore, the Vollert patent never teaches, discloses or suggests to “allocate portions of the data to be transmitted through the laser portion and the radio frequency portion,” as is claimed in Claims 1 and 18, since the Vollert patent disables one
15 transmission path while enabling the other transmission path.

Furthermore, “[i]f the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.”
20 *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Also, “[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA
25 1959).

With regard to incorporating a laser transmitter, as it is taught by the Taglione patent, for the IR transmission portion in the transmission system of the Vollert patent, the Applicants respectfully refer the Examiner to the
30 Taglione patent (referring to col. 3, lines 52-57), where it is clearly stated that “a medium band IR emitter is based upon InGaAsP LED or a laser

diode, which has a nominal spectral response and generally will be arranged to provide a diffuse, **relatively high power (about 500 mW) transmission.**” **Therefore, the Applicants submit that the Taglione patent diffuses relatively high power during a transmission.** The Applicants further refer the Examiner to the Vollert patent (referring to page 3, lines 14-19), where it states “[a] further advantage of the method according to the invention ... **the average power consumption in the communication terminals is lower because of the lower transmitting power of the infrared transmission path ...**” **Thus, the Applicants submit that one of the main advantages claimed in the Vollert patent (page 1, Figure 1 description) is that in order to save consumption of power,** the Vollert patent allows for the transmission of signals using only the bidirectional infrared transmission path whenever possible, **which has lower power consumption** than the radio transmission path, thus limiting the radio transmissions substantially and reducing the average power consumption.

In addition, **the Applicants strongly submit that it is common knowledge to someone of ordinary skill in the art of electronic design that a design requiring high power or high energy outputs can not be combined with a design requiring low power or low energy outputs without damaging the low power design.** At the very least, the low power design will stop to function once it is combined with the high power design components, and the low power (energy) design will change its principle of operation rendering it unsatisfactory for its intended purpose. On a worst case scenario, the low power design components will short circuit and burn under the power demands of the high power (energy) design.

Therefore, **the Applicants strongly submit that the proposed modification of combining the prior art from the Vollert patent, which claims low power consumption during the infrared transmission, with the prior art taught by the Taglione patent, which have relatively high power (about 500 mW) transmission, would change the principle of operation of the Vollert patent. Thus, it would not have been apparent to any one skilled in the art to use the prior arts in this manner, since the combination of the prior art references would render the Vollert patent unsatisfactory for its intended purpose.**

Furthermore, the Applicants respectfully note that combining the prior art of the Perdue patent with three or more prior art references in order to reject Claims 10, 12, 14, and 22 is clear evidence of the non obviousness of Claims 10, 12, 14, and 22. Therefore, the Applicants believe that a clear evidence of the non obviousness of an invention is shown when a multiplicity of references, usually over three references, must be combined in order to meet the claimed invention. Thus, **the Applicants submit that it is clear evidence of the non obviousness of the present invention that a total of four references must be combined in order to meet the claimed invention recited on Claims 10, 12, 14, and 22.** For the foregoing reasons the Applicants respectfully believe that Claims 10, 12, 14, and 22, as written, are patentable over the excessive combination of prior art references and respectfully request that this rejection of Claims 10, 12, 14, and 22 under 35 U.S.C. §103(a) be withdrawn.

For the foregoing reasons the Applicants respectfully believe that Claims 10, 12, 14, and 22, as written, are patentable over the combination of prior art references and respectfully requests that this rejections of Claims 10, 12, 14, and 22 under 35 USC §103(a) be withdrawn.

Claims Rejections - 35 USC§ 103(a)

Examiner's rejections of Claims 11 and 13 over the Perdue patent in view of the Taglione patent or the Nakamura patent and in further view of the Vowell patent or the Shibuya patent

- 5 In section 7 of the current office action, the Examiner rejected Claims 11 and 13 under 35 U.S.C. § 103(a) as being unpatentable over the Perdue patent, in view of the Taglione patent, or the Nakamura patent, and in further view of the Vowell patent or Shibuya (US Pat. No. 6,509,991, hereinafter referred to as the "Shibuya patent").
- 10 In particular the Examiner stated that, regarding Claim 11, the modified optical transmission system of the Perdue and Taglione, or Nakamura patents differ from the claimed invention in that the Perdue and Taglione, or Nakamura patents do not disclose that the controller includes a plurality of latches and a logic device to further provide adjustments levels for the portions of data to be transmitted. The Examiner further
- 15 stated that the Vowell patent teaches an IR transceiver module that includes an IR transmitter and receiver and a communication logic that is coupled to the transceiver to control communication (referring to column 3, lines 5-8), wherein the communication logic includes state machines, buffers, latches, registers, memories, etc (referring to column 3, lines 8-10). Likewise, the Examiner stated that the Shibuya patent teaches a
- 20 transmit and receive control unit (referring to element 10 in Figure 6) that is comprised of latches (referring to elements 59, 60, 61 in Figure 6) and logic devices (referring to elements 62, 63 in Figure 6). Therefore, the Examiner concluded that it would have been obvious to a person of ordinary skill in the art at time of invention that a controller such as the one of the Perdue patent can include latches and logic devices, as it is taught
- 25 by the Vowell or Shibuya patents, to provide monitoring and control functions. Regarding Claim 13, the Examiner stated that the Perdue patent teaches that the IR portion and the RF portion are configured to transmit in multiple channels (referring to column 6 lines 23-34 and 76, 78, 80, and 82 in Figure 5).

Regarding the rejection of Claims 11 and 13 over the Perdue patent in view of the Taglione patent or the Nakamura patent and in further view of the Vowell patent or the Shibuya patent

The Applicants respectfully note that trying to combine the prior art of the Perdue patent with three or more prior art references in order to reject Claims 11 and 13 is clear evidence of the unobviousness of Claims 11 and 13. Therefore, the Applicants believe that a clear evidence of the non obviousness of an invention is shown when a multiplicity of references, usually over three references, must be combined in order to meet the claimed invention. Thus, **the Applicants submit that it is clear evidence of the non obviousness of the present invention that a total of five references must be combined in order to meet the claimed invention recited on Claims 11 and 13. For the foregoing reasons the Applicants respectfully believe that Claims 11 and 13, as written, are patentable over the excessive combination of prior art references** and respectfully request that this rejection of Claims 11 and 13 under 35 U.S.C. §103(a) be withdrawn. Additionally, Claims 11 and 13 are dependent upon Claim 1. Therefore, the Applicants respectfully refer the Examiner to the comments above regarding Claim 1. Thus, the Applicants believe that Claims 11 and 13 are allowable, at least based on their dependency upon an allowable base claim.

Claims Rejections - 35 USC§ 103(a)

Examiner's rejections of Claims 17 and 41 over the Willebrand patent in view of the Driessen patent

In section 8 of the current office action, the Examiner rejected Claims 17 and 41 under 35 U.S.C. § 103(a) as being unpatentable over the Willebrand patent, in view of Driessen (US Pat. No. 5,936,578, hereinafter referred to as the "Driessen patent").

In particular the Examiner stated that, regarding Claims 17 and 41, the Willebrand patent differs from the claimed invention in that the Willebrand patent does not

specifically disclose an optical reflector to deflect transmission from the IR portion to work around the fixed objects. The Examiner further stated that it is well known to incorporate a reflector or a deflector along the path of communication to pass the light around an obstacle or an object. Then, the Examiner stated that the Driessen patent teaches an optical transmission system (referring to Figure 6), wherein an optical reflector is used to deflect transmission from a laser portion to work around fixed objects (referring to column 6, lines 1-7). Next, the Examiner stated that, as it is taught by the Driessen patent, it would have been obvious to an artisan at the time of invention to incorporate an optical reflector along the path of transmission in the wireless data communication system taught by the Willebrand patent to further continue signal transmission, when an obstacle or an object prevent the passage of light, so that the signal can reach a remote sight or a destination.

Regarding Claims 11 and 41, the Applicants refer the Examiner to page 77 of this response.

Claims Rejections - 35 USC§ 103(a)

Examiner's rejections of Claims 25-28, 47-48, and 50-51 over the Willebrand patent in view of the Medved patent, or the Bloom patent

In section 9 of the current office action, the Examiner rejected Claims 25-28, 47-48, and 50-51 under 35 U.S.C. § 103(a) as being unpatentable over the Willebrand patent, in view of Medved et al. (US Pat. No. 5,818,619, hereinafter referred to as the "Medved patent"), or Bloom (US Pat. No. 6,323,980, hereinafter referred to as the "Bloom patent").

In particular the Examiner stated that, regarding Claims 25-28, 47-48, and 50-51, the Willebrand patent differs from the claimed invention in that the Willebrand patent does not specifically disclose a portion of the network is configured with a ring topology, or a SONET ring. Furthermore, the Examiner stated that the Willebrand patent further teaches that the I/O signal paths may be fiber optic or wire channels

that connect the master and slave stations (referring to elements 22 and 24 in Figure 3) to other wireless stations at the same location, thereby making the hybrid link (referring to element 20 in Figure 3) a repeater in a series of such hybrid links (referring to element 20 in Figure 3) in the communication network or system, and alternatively, the I/O signal paths (referring to elements 32 and 34 in Figure 3) may be part of land-based fiber optic or wire communication links to distant land-based communication stations (referring to 5, lines 10-20).

In addition, the Examiner stated that the Medved patent teaches wireless communication systems (referring to elements 80, 82, and 84 in Figure 5) can be applicable to any type of network such as ring network (referring to column 1, lines 35-40), and that the Bloom patent teaches an optical transceiver (referring to element 10 in Figure 2) and a RF transceiver (referring to element 13 in Figure 2) can be used in a network with a SONET format (referring to column 5, lines 30-45).

Then, the Examiner stated that it would have been obvious to an artisan at the time of the invention to incorporate the wireless data transmission system of the Willenbrand patent in a ring network, or in a SONET ring to provide and share information between other wireless devices on a network, as it is suggested by the Willebrand patent and as it is taught by the Medved and Bloom patents.

Regarding Claims 25-28, 47-48, and 50-51, the Applicants refer the Examiner to page 77 of this response.

Claim Rejections - 35 USC § 102(e)

In section 10 of the current office action, the Examiner rejected Claims 1-5, 8, 9, 11, 15, 18-21, 24-26, 29, 30, 32, 33, 35, 39, 42, 43, 45, and 49-51 under 35 U.S.C. § 102 (e) as being anticipated by Acampora (US Pat. No. 6,049,593, hereinafter referred to as the “Acampora patent”).

Examiner's rejections of Claims 1 and 18

The Examiner stated that regarding Claims 1 and 18, the Acampora patent discloses a node incorporating hybrid radio frequency and optical wireless communication links (referring to Figure 3a), the node comprising: at least one laser portion for transmitting data (referring to "optical transmitter" element 112 in Figure 3a, and to column 6, lines 31-54, column 15, lines 37-47, column 23, lines 44-52, and column 25, lines 10-20); at least one radio frequency portion for transmitting data (referring to "RF transmitter" element 111 in Figure 3a); a data receiver (referring to element 111 in Figure 3a) for receiving data from a data source (referring to column 5, lines 25-45); and a controller (referring to "ATM switch" element 117 and "control processor" element 114 in Figure 3a) configured to receive data from a data source and connected with the laser portion and the radio frequency portion to allocate portions of the data to be transmitted through the laser portion and the radio frequency portion (referring to column 6, lines 31-54, column 15, lines 37-47, column 23, lines 44-52, column 25, lines 10-20, and column 27, lines 37-56).

Regarding the rejections of Claims 1 and 18 over the Acampora patent

The Applicants strongly disagree with the Examiner's statement that "the Acampora patent does teach allocating portions of data to be transmitted through the laser portion and the radio frequency portion."

Addressing the requirements of anticipation, the Federal Circuit stated that, "There must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention" *Scripps Clinic & Research Found. V. Genentech Inc.*, 927 F.2d 1576 (Fed. Cir. 1991). Furthermore, the Federal Circuit stated that "Anticipation requires that every element of the claims appear in a single reference ..." *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264 (Fed. Cir. 1991), and that "Anticipation requires the disclosure in a single

prior art reference of each element of the claim under consideration.”
W.L. Gore & Associates v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303
(Fed. Cir. 1983). In addition, the Federal Circuit stated that under 35
U.S.C. § 102, “anticipation requires the presence in a single prior art
reference disclosure of each and every element of the claimed invention,
arranged as in the claim” *Lindemann Maschinenfabrik GmbH v.*
American Hoist & Derrick Co., 730 F.2d 1452 (Fed. Cir. 1984).

Therefore, in order to establish a prima facie case of anticipation the
Examiner must set forth an argument that provides (1) a single reference
(2) that teaches or enables (3) each of the claimed elements (as arranged in
the claim) (4) either expressly or inherently and (5) as interpreted by one
of ordinary skill in the art. All of these factors must be present, or a case
of anticipation is not met.

Independent Claims 1 and 18 of the present invention recite the limitation
“a controller configured to receive data from a data source and connected
with the laser portion and the radio frequency portion to allocate portions
of the data to be transmitted through the laser portion and the radio
frequency portion.” The Applicants submit that this limitation is not taught,
disclosed, or suggested in the Acampora patent.

The Applicants submit that the Acampora patent does not teach or even
suggest to allocate portions (emphasis added) of the data to be
transmitted through the laser portion and the radio frequency portion, as
claimed in Claims 1 and 18. In contrast with the present invention, the
Acampora patent specifically teaches that “a controller causes the
communications switch to route telecommunications traffic between the
first transceiver and the second transceiver” (referring to column 6 lines
42 to 45), but the Acampora patent never suggest to route only portions of
the data through the laser portion and the radio portion, as suggested by

the Examiner. The Acampora patent also states that “a controller causes the communications switch to route telecommunications traffic received by the radio transceiver to the optical transceiver” (referring to column 9 lines 6 to 11), but once again, **the Applicants submit that the Acampora patent does not suggest to route only portions of the data, as disclosed in Claims 1 and 18 of the present invention.**

Thus, the Applicants submit that, in contrast with the present invention which allocates portions of the data to be transmitted through the laser portion and the radio frequency portion, **the Acampora patent transmits all of the data** (emphasis added) through the optical transceivers and the radio transceivers **by using a switch** (referring to Claim 1, element 117 in Figure 3a, and column 15, lines 37 to 47).

Therefore, the Applicants submit that on all the sections of the Acampora patent quoted by the Examiner on the Office Action dated July 27, 2006, and reiterated above, there is not a single mention of only allocating portions of the data to be transmitted. The Applicants submit that the Acampora patent only mentions transmitting data through the optical transceivers and the radio transceivers, but the Acampora patent does not teach or even suggest to allocate or transmit only portions of the data (emphasis added).

Thus, the Acampora patent does not teach, disclose, or suggest to transmit **only portions of the data**. The Applicants respectfully request that the Examiner indicate exactly where in the Acampora patent the Examiner finds that the limitation “allocate portions of the data to be transmitted” is taught, disclosed, or suggested.

Therefore, the Applicants submit that the Acampora patent, in combination with the knowledge of one skilled in the art, does not teach,

disclose, or suggest, expressly or inherently, all of the claimed limitations of Claims 1 and 18.

Because the Acampora patent fails to teach all the elements of Claims 1 and 18, arranged exactly as in Claims 1 and 18, for reasons discussed above, the Applicants respectfully request that the Examiner withdraw this rejection of Claims 1 and 18.

Examiner's rejections of Claims 29 and 42

Regarding Claims 29 and 42, the Examiner stated that the Acampora patent further teaches that the controller is configured to receive environmental information and the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the environment information (referring to column 5, lines 10-22, and column 25, line 10 to column 27, line 56).

Regarding the rejections of Claims 29 and 42 over the Acampora patent

The Applicants strongly disagree with the Examiner's statement that "the Acampora patent teaches that the controller is configured to receive environmental information and the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the environmental information."

Claims 29 and 42 of the present invention recite the limitations that "the controller is configured to receive environmental information and wherein the portions of the data to be transmitted through the laser portion and the radio portion are adjusted by the controller based on the environmental information." The Applicants submit that these limitations are not taught, disclosed, or even suggested in the Acampora patent.

After carefully reviewing the paragraphs of the Acampora patent cited by the Examiner (referring to column 5, lines 10-22, and column 25, line 10 to column 27, line 56), **the Applicants could not find a single mention of the controller receiving environmental information and of the controller adjusting the data to be transmitted based on the environmental information**, as suggested by the Examiner. Therefore, the Applicants respectfully request that the Examiner indicate exactly where in the Acampora patent the Examiner finds that the limitation of “the controller is configured to receive environmental information and wherein the portions of the data to be transmitted through the laser portion and the radio portion are adjusted by the controller based on the environmental information” is taught, disclosed, or suggested.

Furthermore, **after meticulously reading the Acampora patent on its entirety the Applicants strongly submit that the Acampora patent does not have a controller configured to receive environmental information, and the Acampora patent does not use environmental information to adjust the path of the data transmission.** The Applicants firmly believe that the Acampora patent uses a controller that routes (switches) the data through either a radio transceiver or an optical transceiver based on the traffic congestion of the data being transmitted and the desired QoS (Quality of Service) guaranteed to a user (referring to column 19, lines 28 to 39). The Applicants further submit that the Acampora patent teaches a controller that is not configured to receive environmental information (referring to Figure 3a and column 5, lines 9 to 21, column 6 lines 42 to 48, column 9 lines 6 to 11, and column 15, lines 37 to 47), instead the Acampora patent teaches a controller that normally routs all the data through radio transmitters which is more reliable. However, when there are too many users and the demand for data transmission causes congestion on the radio transmitters, the Acampora patent teaches that the

controller switches the data transmission to an abundance of optical transceivers (referring to column 5, lines 8 to 42).

5 In addition, the Applicants submit that the Acampora patent teaches that the Acampora patent “relies on the short distance between the optical links and their highly focused nature, to provide excellent margin against transmitting through fog and other atmospheric disturbances” (referring to column 5, lines 13 to 18). The Applicants further submit that the controller taught by the Acampora patent does not receive environmental information, but
10 instead, the controller taught by the Acampora patent relies on the short distance between the optical links and their highly focused nature in order to transmitting through fog and other atmospheric disturbances.

15 The Applicants further submit that the Acampora patent teaches (referring to column 25, line 12 to column 27, line 1) that “path loss in an optical communications link is affected by atmospheric absorption, scattering, and turbulence, ... Fortunately, for available semiconductor laser diode wavelengths of 810 nm, 1300 nm, and 1550 nm, path loss is negligible due to molecular absorption. Therefore, **the Applicants submit that the**
20 **Acampora patent once again relies on the short distance between an abundance of optical links and the molecular absorption of semiconductor laser diodes, in order to transmit data through atmospheric absorption, scattering, and turbulence.** In contrast with the present invention, the Applicants submit that the Acampora patent does not
25 rely on monitoring the environmental information through a controller configured to receive environmental information from the environment, and **the Acampora patent does not rely on transmitting portions of the data by adjusting them with the controller based on this environmental information, instead the Acampora patent just goes**
30 **ahead and transmits the data through the optical transceiver solely relying on the abundance of optical links and the molecular absorption**

of semiconductor laser diodes, in order to transmit data through a variety of atmospheric condition. In addition, the Acampora patent uses its controller to switch the transmission from the optical transceivers to the radio transceivers once the data transmission demand (bandwidth upon demand) is reduced to a level that can be supported by the radio transceivers (referring to column 4, lines 18 to 48), without the controller using any environmental information.

Therefore, **the Applicants strongly submit that the Acampora patent switches transmissions between the optical transceiver and the radio transceiver based on the traffic congestion (bandwidth upon demand) of the data being transmitted and the desired QoS (Quality of Service) guaranteed to a user, regardless of the environmental conditions, while the present invention switches transmissions between the laser portion and the radio frequency portion based on the environmental information received by the controller, and not based on bandwidth upon demand and Quality of Service.**

Furthermore, **the Applicants submit that the Acampora patent does not have a controller that is configured to receive environmental information**, as claimed in the present invention, and **that the Acampora patent only monitors the bandwidth upon demand and the QoS, and the Acampora patent does not monitor the environmental information around the signal being transmitted.** Thus, the Applicants strongly submit that the Acampora patent does not use any environmental inputs in order to control the transmissions through the optical transceivers and radio transceivers.

The Applicants respectfully request that the Examiner indicate exactly where in the Acampora patent the Examiner finds that the limitations of “**a controller configured to receive environmental information**” and

“wherein the portions of the data to be transmitted through the laser portion and the radio portion are adjusted by the controller based on the environmental information” are taught, disclosed, or suggested.

5 Because the Acampora patent fails to teach all the elements of Claims 29 and 42, arranged exactly as in Claims 29 and 42, for reasons discussed above, the Applicants respectfully request that the Examiner withdraw this rejection of Claims 29 and 42.

10 **Examiner’s rejections of Claims 2, 8, 19, 32, and 43**

 The Examiner stated that regarding Claims 2, 8, 19, 32, and 43, the Acampora patent further teaches the controller (referring to “ATM switch” element 117 and “control processor” element 114 in Figure 3a) is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion and the radio
15 frequency portion (referring to column 6, lines 31-53 and column 27, lines 37-56).

Regarding Claims 2, 8, 19, 32, and 43, the Applicants refer the Examiner to page 77 of this response.

20 **Examiner’s rejections of Claims 3, 4, 9, 20-21, 33, and 45**

 The Examiner stated that regarding Claims 3, 4, 9, 20-21, 33, and 45, the Acampora patent further teaches that the controller is configured to receive environmental information and the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the environment
25 information (referring to column 5, lines 10-22 and column 25, line 10 to column 27, line 56).

Regarding the rejections of Claims 3, 4, 9, 20-21, 33, and 45 over the Acampora patent

30

The Applicants strongly disagree with the Examiner's statement that
"the Acampora patent does teach that the controller is configured to
receive environmental information and the portions of the data to be
transmitted through the laser portion and the radio frequency portion are
adjusted by the controller based on the environment information."

Therefore, the Applicants refer the Examiner to the comments above
regarding Claims 29 and 42. For the reasons given above, **the Applicants**
submit that the Acampora patent does not teach or disclose allocating
portions of the data, a controller configured to receive environmental
information, and adjusting the data transmission based on the
environmental information received by the controller.

Therefore, the Applicants submit that the Acampora patent, in
combination with the knowledge of one skilled in the art, does not teach,
disclose or suggest, expressly or inherently, all of the claimed limitations
of Claims 3, 4, 9, 20-21, 33, and 45.

Because the Acampora patent fails to teach all the elements of 3, 4, 9, 20-
21, 33, and 45, arranged exactly as in Claims 3, 4, 9, 20-21, 33, and 45, for
reasons discussed above, the Applicants respectfully request that the
Examiner withdraw this rejection of Claims 3, 4, 9, 20-21, 33, and 45.

Examiner's rejections of Claims 5 and 30

The Examiner stated that regarding Claims 5 and 30, the Acampora patent further teaches
the laser portion is configured to both transmit and receive and wherein the radio
frequency portion is configured to both transmit and receive ("note that first and second
transceivers each transmit and receive, respectively").

Regarding Claims 5 and 30, the Applicants refer the Examiner to
page 77 of this response.

Examiner's rejections of Claims 11 and 35

The Examiner stated that regarding Claims 11 and 35, the Acampora patent further teaches that the controller (referring to "control processor and ATM switch" in Figure 3a) includes a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion (referring to column 6, lines 31-53, column 15, lines 37-47, and column 27, lines 37-56).

Regarding the rejections of Claims 11 and 35 over the Acampora patent

After carefully reviewing the paragraphs of the Acampora patent cited by the Examiner (referring to column 6, lines 31-53, column 15, lines 37-47, and column 27, lines 37-56), **the Applicants could not find a single mention of a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion, as suggested by the Examiner. Therefore, the Applicants respectfully request that the Examiner indicate exactly where in the Acampora patent the Examiner finds that the limitation of "a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion" is taught, disclosed, or suggested.**

Therefore, the Applicants submit that the Acampora patent, in combination with the knowledge of one skilled in the art, does not teach, disclose or suggest, expressly or inherently, all of the claimed limitations of Claims 11 and 35.

Because the Acampora patent fails to teach all the elements of 11 and 35, arranged exactly as in Claims 11 and 35, for reasons discussed above, the Applicants respectfully request that the Examiner withdraw this rejection of Claims 11 and 35.

Examiner's rejections of Claims 15, 24, 39, and 49

The Examiner stated that regarding Claims 15, 24, 39, and 49, the Acampora patent further teaches that the laser portion and radio frequency portion are configured to transmit and receive in tandem, whereby the node may be configured to provide a hybrid serial link to permit tailored radio frequency or optical network connections (referring to column 6, lines 35-53 and Figure 3a).

Regarding the rejections of Claims 15, 24, 39, and 49 over the Acampora patent

After carefully reviewing the paragraph of the Acampora patent cited by the Examiner (referring to column 6, lines 35-53, and Figure 3a), **the Applicants could not find a single mention of the laser portion and radio frequency portion are configured to transmit and receive in tandem**, as suggested by the Examiner. Therefore, the Applicants respectfully request that the Examiner indicate exactly where in the Acampora patent the Examiner finds that the limitation of "the laser portion and radio frequency portion are configured to transmit and receive in tandem" is taught, disclosed, or suggested.

Furthermore, **the Applicants submit that the Acampora patent uses a controller which is a switch, and this switch forces the data transmission to be sent either through the optical transceiver or the radio transceiver, but this switch (controller) does not allow the transmission to go out on tandem through both optical and radio**

transceivers, as disclosed by Claims 15, 24, 39, and 49 of the present invention.

Therefore, the Applicants submit that the Acampora patent, in combination with the knowledge of one skilled in the art, does not teach, disclose or suggest, expressly or inherently, all of the claimed limitations of Claims 15, 24, 39, and 49.

Because the Acampora patent fails to teach all the elements of 15, 24, 39, and 49, arranged exactly as in Claims 15, 24, 39, and 49, for reasons discussed above, the Applicants respectfully request that the Examiner withdraw this rejection of Claims 15, 24, 39, and 49.

Examiner's rejections of Claims 25-26 and 50-51

The Examiner stated that regarding Claims 25-26 and 50-51, the Acampora patent further teaches that a portion of the network is configured with a ring topology or SONET ring (referring to column 23, lines 49-50, column 24, line 47, and Figures 6, 7a, 10a, 10b).

Regarding the rejections of Claims 25-26 and 50-51 over the Acampora patent

After carefully reviewing the paragraphs of the Acampora patent cited by the Examiner (referring to column 23, lines 49-50, column 24, line 47, and Figures 6, 7a, 10a, 10b), the Applicants could not find a single mention of a portion of the network is configured with a ring topology or SONET ring, as suggested by the Examiner. Therefore, the Applicants respectfully request that the Examiner indicate exactly where in the Acampora patent the Examiner finds that the limitation of "a portion of the network is configured with a ring topology or SONET ring" is taught, disclosed, or suggested.

Furthermore, the Applicants submit that the paragraphs cited by the Examiner on the Acampora patent only describe the use of a “lasercom transceiver” which can have all weather availability and higher data rates by use of an inexpensive, compact, low power, eye safe transceiver, but that the Acampora patent does not teach or even suggest the use of a ring topology or SONET ring.

Therefore, the Applicants submit that the Acampora patent, in combination with the knowledge of one skilled in the art, does not teach, disclose or suggest, expressly or inherently, all of the claimed limitations of Claims 25-26 and 50-51.

Because the Acampora patent fails to teach all the elements of 25-26 and 50-51, arranged exactly as in Claims 25-26 and 50-51, for reasons discussed above, the Applicants respectfully request that the Examiner withdraw this rejection of Claims 25-26 and 50-51.

Claims Rejections - 35 USC § 103(a)

Examiner’s rejections of Claims 6, 7, 13, 16, 23, 27, 28, 31, 37, 40, and 46-48 over the Acampora patent in view of the Kavehrad article

In section 11 of the current office action, the Examiner rejected Claims 6, 7, 13, 16, 23, 27, 28, 31, 37, 40, and 46-48 under 35 U.S.C. § 103(a) as being unpatentable over the Acampora patent, in view of Kavehrad (the Article “A countermeasure to improve outage performance of interference-limited microwave radio links,” Canadian Electrical & Computer Engineering Journal, Vol. 16, No. 1, pp. 13-18, 1991, hereinafter referred to as the “Kavehrad article”).

Examiner’s rejections of Claims 6, 13, 16, 23, 31, 37, 40, and 46

The Examiner stated that regarding Claims 6, 13, 16, 23, 31, 37, 40, and 46, the Acampora patent differs from the claimed invention in that the Acampora patent does not specifically disclose the laser portion and the radio frequency portion are

configured to transmit in multiple channels. The Examiner further stated that the Kavehrad article teaches hybrid radio frequency and optical wireless links (referring to Figure 1), wherein a laser portion and a radio frequency portion are configured to transmit in multiple channels (referring to page 14, "Proposed hybrid architecture section," lines 10-26).

Then, the Examiner stated that, as it is taught by the Kavehrad article, it would have been obvious that the hybrid optical and wireless communication system of the Acampora patent can transmit in multiple channels to transmit and receive a plurality of different channels to further increase the transmission capacity of the system.

Regarding Claims 6, 13, 16, 23, 31, 37, 40, and 46, the Applicants refer the Examiner to page 77 of this response.

Examiner's rejections of Claim 7

The Examiner stated that regarding Claim 7, the Acampora patent teaches that the controller is configured to receive environmental information and the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the environment information (referring to column 5, lines 10-22, and column 25, line 10 to column 27, line 56).

Regarding Claim 7, the Applicants refer the Examiner to page 77 of this response.

Examiner's rejections of Claims 27-28 and 47-48

The Examiner stated that regarding Claims 27-28 and 47-48, the Acampora patent teaches a portion of the network is configured with a ring topology or SONET ring (referring to column 23, lines 49-50 and column 24, line 47 and Figures 6, 7a, 10a, 10b).

Regarding Claims 27-28 and 47-48, the Applicants refer the Examiner to page 77 of this response.

Claims Rejections - 35 USC § 103(a)

**Examiner's rejections of Claims 10, 12, 22, 34, 36, and 44 over the Acampora patent
in view of the Vollert patent**

In section 12 of the current office action, the Examiner rejected Claims 10, 12, 22, 34, 36, and 44 under 35 U.S.C. § 103(a) as being unpatentable over the Acampora patent, in view of the Vollert patent.

Examiner's rejections of Claims 10, 12, 22, 34, 36, and 44

The Examiner stated that regarding Claims 10, 12, 22, 34, 36, and 44, the Acampora patent differs from the claimed invention in that the Acampora patent does not specifically teach the laser portion and the radio frequency portion have transmit and receive strengths and the controller is configured to monitor the transmit and receive strengths, wherein the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on their transmit and receive strengths. The Examiner further stated that the Vollert patent teaches bi-directional transmission and reception of information over radio link (referring to "PUS" in Figure 1) or optical link (referring to "IUS" in Figure 1) based on verification of the transmission quality of different paths (referring to "Translation" page 5, last paragraph and page 6, first paragraph) by a controller (referring to "PST" in Figure 1) and switching (referring to "translation" page 6, lines 10-12) from one link to the other based on the evaluation and measurement results (referring to "translation" page 6, lines 3-18).

Next, the Examiner stated that it would have been obvious to a person of ordinary skill in the art to incorporate a controller such as the one taught by the Vollert patent for the controller in the data transmission system of the Acampora patent to further verify the transmission quality of the transmission paths.

**Regarding Claims 10, 12, 22, 34, 36, and 44, the Applicants refer the
Examiner to page 77 of this response.**

Claims Rejections - 35 USC§ 103(a)

Examiner's rejections of Claims 14 and 38 over the Acampora patent in view of the Kavehrad article, and in further view of the Vollert patent

5 In section 13 of the current office action, the Examiner rejected Claims 14 and 38 under 35 U.S.C. § 103(a) as being unpatentable over the Acampora patent, in view of the Kavehrad article, and in further view of the Vollert patent.

Examiner's rejections of Claims 14 and 38

10 The Examiner stated that regarding Claims 14 and 38, the modified communication system of the Acampora patent and the Kavehrad article differs from the claimed invention in that the Acampora patent and the Kavehrad article do not specifically teach the laser portion and the radio frequency portion have transmit and receive strengths and the controller is configured to monitor the transmit and receive strengths,
15 wherein the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on their transmit and receive strengths.

Furthermore, the Examiner stated that the Vollert patent teaches bi-directional
20 transmission and reception of information over radio link (referring to "FUS" in Figure 1) or optical link (referring to "IUS" in Figure 1) based on verification of the transmission quality of different paths (referring to "Translation" page 5, last paragraph and page 6, first paragraph) by a controller (referring to "PST" in Figure 1) and switching (referring to "translation" page 6, lines 10-12) from one link to the other
25 based on the evaluation and measurement results (referring to "translation" page 6, lines 3-18).

Next, the Examiner stated that it would have been obvious to a person of ordinary skill in the art to incorporate a controller such as the one taught by the
30 Vollert patent for the controller in the data transmission system of the Acampora

patent modified by the Kavehrad article to verify the transmission quality of the transmission paths.

Regarding Claims 14 and 38, the Applicants refer the Examiner to
5 **page 77 of this response.**

Claims Rejections - 35 USC § 103(a)

Examiner's rejections of Claims 17 and 41 over the Acampora patent in view of the
Driessen patent

10 In section 14 of the current office action, the Examiner rejected Claims 17 and 41 under 35 U.S.C. § 103(a) as being unpatentable over the Acampora patent, in view of the Driessen patent.

Examiner's rejections of Claims 17 and 41

15 The Examiner stated that regarding Claims 17 and 41, the Acampora patent differs from the claimed invention in that the Acampora patent does not specifically teach that an optical reflector is used to deflect transmissions from the laser portion to work around the fixed objects. The Examiner further stated that it is well known to incorporate a reflector or a deflector along the path of communication to pass the
20 light around an obstacle or an object, since the Driessen patent teaches an optical transmission system (referring to Figure 6), wherein an optical reflector is used to deflect transmissions from a laser portion to work around the fixed objects (referring to column 6, lines 1-7).

25 Next, the Examiner stated that, as it is taught by the Driessen patent, it would have been obvious to an artisan at the time of invention to incorporate an optical reflector along the path of transmission in the wireless data communication system of the Acampora patent to further continue signal transmission, when an obstacle or an object prevent the passage of light, so that the signal can reach a
30 remote sight or a destination.

Regarding Claims 17 and 41, the Applicants refer the Examiner to page 77 of this response.

Claims Rejections - 35 USC§ 103(a)

5 **Examiner's rejections of Claims 1-5, 8-12, 15, 18-22, and 24-26 over the Vollert patent in view of the Acampora patent**

In section 15 of the current office action, the Examiner rejected Claims 1-5, 8-12, 15, 18-22, and 24-26 under 35 U.S.C. § 103(a) as being unpatentable over the Vollert patent, in view of the Acampora patent.

10

Examiner's rejections of Claims 1 and 18

The Examiner stated that regarding Claims 1 and 18, the Vollert patent discloses a node incorporating hybrid radio frequency and optical wireless communication links (referring to Figure 1), the node comprising: at least one infrared portion: for
15 transmitting data (referring to "ISE" and "IUS" in Figure 1); at least one radio frequency portion for transmitting data (referring to "A" and "FUS" in Figure 1); a data receiver (referring to "SP" in Figure 1) for receiving data from a data source (referring to "Translation" page 5, last paragraph); and a controller (referring to "PST" in Figure 1) configured to receive data from a data source and connected
20 with the infrared portion and the radio frequency portion to allocate portions of the data to be transmitted through the infrared portion and the radio frequency portion (referring to "Translation" page 5, last paragraph).

Furthermore, the Examiner stated that the Vollert patent differs from the claimed
25 invention in that the Vollert patent does not specifically disclose a laser portion, but that the Acampora patent teaches a hybrid radio frequency and optical wireless links (referring to Figure 3a), wherein optical signals are generated by laser portion (referring to column 23, lines 44-52 and column 25, lines 10-20).

30 Next, the Examiner stated that it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a laser portion such as the

one taught by the Acampora patent, for the IR portion in the data transmission system of the Vollert patent to generate a uniform, narrow, and relatively high power output signal.

5 **Regarding the rejections of Claims 1 and 18 over the Vollert patent in view of the Acampora patent**

10 The Applicants **strongly** disagree with the Examiner's statement that "the combination of the Vollert and Acampora patents does teach allocating portions of data to be transmitted through the laser portion and the radio frequency portion."

15 The CCPA stated that under 35 U.S.C. § 103(a), "In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification" *In re Lintner*, 458 F.2d 1013 (C.C.P.A. 1972). Further, the CCPA has subsequently added that the prima facie case requires that the reference teachings "appear to have suggested the
20 claimed subject matter." *In re Rinehart*, 531 F.2d 1048 (C.C.P.A. 1976). In addition, the MPEP 2143.03 noted that to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art.

25 Independent Claims 1 and 18 of the present invention recite the limitation "a controller configured to receive data from a data source and connected with the laser portion and the radio frequency portion to allocate portions of the data to be transmitted through the laser portion and the radio frequency portion." The Applicants submit that this limitation is not taught,
30 disclosed, or suggested in the Acampora patent, as previously stated on this Office Action response (referring to pages 38 to 41 of this response). The

Applicants further submit that this limitation is not taught, disclosed, or suggested in the Vollert patent.

5 The Applicants submit that the Vollert patent does not teach or even suggest **to allocate portions** (emphasis added) of the data to be transmitted through the laser portion and the radio frequency portion, as claimed in Claims 1 and 18. **Therefore, the Applicants submit that on all the sections of the Vollert patent quoted by the Examiner on the Office Action dated July 27, 2006, and reiterated above, there is not a**
10 **single mention of only allocating portions of the data to be transmitted. The Applicants submit that the Vollert patent only mentions transmitting data through the infrared portion and the radio frequency portion, but the Vollert patent does not teach or even suggest to allocate or transmit only portions of the data (emphasis**
15 **added).**

Thus, the combination of the Vollert and Acampora patents does not teach, disclose, or suggest to transmit **only portions of the data**. The Applicants respectfully request that the Examiner indicate exactly where
20 in the Vollert patent the Examiner finds that the limitation “allocate portions of the data to be transmitted” is taught, disclosed, or suggested.

Therefore, the Applicants submit that the Acampora patent in combination with the Vollert patent does not teach, disclose or suggest, expressly or
25 inherently, all of the claimed limitations of Claims 1 and 18. For the foregoing reasons the Applicants believe that Claims 1 and 18, as written, are patentable over the combination of prior art references and respectfully request that this rejection of Claims 1 and 18 under 35 U.S.C. §103(a) be withdrawn.

30 **Examiner’s rejections of Claims 2, 8, and 19**

The Examiner stated that regarding Claims 2, 8, and 19, the combination of the Vollert and Acampora patents teaches that the controller is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion and the radio frequency portion (referring to the Acampora patent, column 6, lines 31-53 and column 27, lines 37-56).

Regarding Claims 2, 8, and 19, the Applicants refer the Examiner to page 77 of this response.

Examiner's rejections of Claims 3, 4, 9, 20 and 21

The Examiner stated that regarding Claims 3, 4, 9, 20 and 21, the combination of the Vollert and Acampora patents teaches that the controller is configured to receive environmental information and the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the environment information (referring to the Acampora patent, column 5, lines 10-22, and column 25, line 10 to column 27, line 56).

Regarding the rejections of Claims 3, 4, 9, 20 and 21 over the Vollert patent in view of the Acampora patent

The Applicants strongly disagree with the Examiner's statement that
"the Acampora patent in combination with the Vollert patent teaches that the controller is configured to receive environmental information and the portions of the data to be transmitter through the laser portion and the radio frequency portion are adjusted by the controller based on the environment information."

Therefore, the Applicants refer the Examiner to the comments above regarding Claims 29 and 42 with respect to the Acampora patent anticipating these claims. For the reasons given above, **the Applicants submit that the combination of the Acampora and Vollert patents**

does not teach or disclose allocating portions of the data, a controller configured to receive environmental information, and adjusting the data transmission based on the environmental information received by the controller.

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Therefore, the Applicants submit that the Acampora patent in combination with the Vollert patent does not teach, disclose or suggest, expressly or inherently, all of the claimed limitations of Claims 3, 4, 9, 20 and 21. For the foregoing reasons the Applicants believe that Claims 3, 4, 9, 20 and

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21, as written, are patentable over the combination of prior art references and respectfully request that this rejection of Claims 3, 4, 9, 20 and 21 under 35 U.S.C. §103(a) be withdrawn.

Examiner's rejections of Claim 5

15

The Examiner stated that regarding Claim 5, the combination of the Vollert and Acampora patents teaches that the laser portion is configured to both transmit and receive and wherein the radio frequency portion is configured to both transmit and receive (referring to the Vollert patent, "FUS" and "IUS" in Figure 1, and the Acampora patent Figure 3a).

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Regarding Claim 5, the Applicants refer the Examiner to page 77 of this response.

Examiner's rejections of Claims 10, 12 and 22

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The Examiner stated that regarding Claims 10, 12 and 22, the Vollert patent teaches that the laser portion and the radio frequency portion have transmit and receive strengths and the controller is configured to monitor the transmit and receive strengths, wherein the portions of data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on their transmit and receive

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strengths (referring to "translation" page 6, lines 3-18).

Regarding Claims 10, 12, and 22, the Applicants refer the Examiner to page 77 of this response.

Examiner's rejections of Claim 11

5 The Examiner stated that regarding Claim 11, the combination of the Vollert and Acampora patents teaches that the controller (referring to the Acampora patent "control processor" element 114 and "ATM switch" in Figure 3a) includes a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be
10 transmitted through the laser portion and the radio frequency portion (referring to the Vollert patent "translation" page 5, last paragraph, and the Acampora patent, column 6, lines 31-53, column 15, lines 37-47 and column 27, lines 37-56).

Regarding the rejections of Claim 11 over the Vollert patent in view of the Acampora patent

15 **The Applicants strongly disagree with the Examiner's statement that**
"the Acampora patent in combination with the Vollert patent teaches that the controller includes a plurality of latches and a logic device,
20 wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion."

25 After carefully reviewing the paragraphs of the Acampora patent cited by the Examiner (referring to column 6, lines 31-53, column 15, lines 37-47, and column 27, lines 37-56), **the Applicants could not find a single mention of a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide**
30 **adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion, as**

suggested by the Examiner. Therefore, the Applicants respectfully request that the Examiner indicate exactly where in the Acampora patent the Examiner finds that the limitation of “a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion” is taught, disclosed, or suggested.

For the reasons given above, **the Applicants submit that the combination of the Acampora and Vollert patents does not teach or disclose a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion.**

Therefore, the Applicants submit that the Acampora patent in combination with the Vollert patent does not teach, disclose or suggest, expressly or inherently, all of the claimed limitations of Claim 11. For the foregoing reasons the Applicants believe that Claim 11, as written, is patentable over the combination of prior art references and respectfully request that this rejection of Claim 11 under 35 U.S.C. §103(a) be withdrawn.

Examiner’s rejections of Claims 15 and 24

The Examiner stated that regarding Claims 15 and 24, the combination of the Vollert and Acampora patents teaches that the laser portion and radio frequency portion are configured to transmit and receive in tandem, whereby the node may be configured to provide a hybrid serial link to permit tailored radio Frequency or optical network connections (referring to the Vollert patent “translation” page 8, last paragraph and the Acampora patent, Figure 3a).

Regarding Claims 15 and 24, the Applicants refer the Examiner to

page 77 of this response.

Examiner's rejections of Claims 25 and 26

The Examiner stated that regarding Claims 25 and 26, the combination of the Vollert
5 and Acampora patents teaches that a portion of the network is configured with a ring
topology or SONET ring (referring to the Acampora patent column 23. lines 49-50 and
column 24, line 47 and Figures 6, 7a, 10a, and 10b).

Regarding Claims 25 and 26, the Applicants refer the Examiner to
10 **page 77 of this response.**

Claims Rejections - 35 USC§ 103(a)

Examiner's rejections of Claims 6, 7, 13, 14, 16, 23, 27, and 28 over the Vollert
patent in view of the Acampora patent, and in further view of the Kavehrad article.

15 In section 16 of the current office action, the Examiner rejected Claims 6, 7, 13, 14,
16, 23, 27, and 28 under 35 U.S.C. § 103(a) as being unpatentable over the Vollert
patent, in view of the Acampora patent, and in further view of the Kavehrad article.

Examiner's rejections of Claims 6, 13, 16 and 23

20 The Examiner stated that regarding Claims 6, 13, 16 and 23, the combination of the
Vollert and Acampora patents teaches that differs from the claimed invention in that
the Vollert and Acampora patents do not specifically disclose the laser portion
and the radio frequency portion are configured to transmit in multiple channels. The
Examiner further stated that the Kavehrad article teaches a hybrid radio frequency
25 and optical wireless communication system (referring to Figure 1), wherein the
laser portion and the radio frequency portion are configured to transmit in multiple
channels (referring to page 14, "Proposed hybrid architecture section," lines 10-
26).

30 Then, the Examiner stated that, as it is taught by the Kavehrad article, it would have
been obvious that the hybrid optical and wireless communication system taught by

the Vollert patent and modified by the Acampora patent can transmit multiple channels to transmit and receive a plurality of different channels to further increase the transmission capacity of the system.

5 **Regarding Claims 6, 13, 16, and 23, the Applicants refer the Examiner to page 77 of this response.**

Examiner's rejections of Claim 7

10 The Examiner stated that regarding Claim 7, the combination of the Vollert and Acampora patents with the Kavehrad article teaches that the controller is configured to receive environmental information and the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the environment information (referring to the Acampora patent column 27, lines 37-56).

15 **Regarding Claim 7, the Applicants refer the Examiner to page 77 of this response.**

Examiner's rejections of Claim 14

20 The Examiner stated that regarding Claim 14, the Vollert patent teaches that the laser portion and the radio frequency portion have transmit and receive strengths and the controller is configured to monitor the transmit and receive strengths, wherein the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on their transmit and receive strengths
25 (referring to "translation," page 6, lines 3-18).

Regarding Claim 14, the Applicants refer the Examiner to page 77 of this response.

30 **Examiner's rejections of Claims 27 and 28**

The Examiner stated that regarding Claims 27 and 28, the combination of the Vollert and

Acampora patents with the Kavehrad article teaches that a portion of the network is configured with a ring topology or SONET ring (referring to the Acampora patent column 23, lines 49-50 and column 24, line 47 and Figures 6, 7a, 10a, 10b, and the Vollert patent translation, page 6, lines 3-18).

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Regarding Claims 27 and 28, the Applicants refer the Examiner to page 77 of this response.

Claims Rejections - 35 USC§ 103(a)

10 **Examiner's rejections of Claim 17 over the Vollert patent in view of the Acampora patent, and in further view of the Driessen patent.**

In section 17 of the current office action, the Examiner rejected Claim 17 under 35 U.S.C. § 103(a) as being unpatentable over the Vollert patent, in view of the Acampora patent, and in further view of the Driessen patent.

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Examiner's rejections of Claim 17

The Examiner stated that regarding Claim 17, the combination of the Vollert and Acampora patents differs from the claimed invention in that the Vollert and Acampora patents do not specifically disclose an optical reflector to deflect transmissions from the laser portion to work around the fixed objects. The Examiner further stated that it is well known to incorporate a reflector or a deflector along the path of communication to pass the light around an obstacle or an object, since the Driessen patent teaches an optical transmission system (referring to Figure 6), wherein an optical reflector is used to deflect transmissions from a laser portion to work around the fixed objects (referring to column 6, lines 1-7).

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Then, the Examiner stated that, as it is taught by the Driessen patent, it would have been obvious to an artisan at the time of invention to incorporate an optical reflector along the path of transmission in the wireless data communication system of the Vollert patent modified by the Acampora patent to further continue signal transmission, when an

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obstacle or an object prevent the passage of light, so that the signal can reach a remote sight or a destination.

Regarding Claim 17, the Applicants refer the Examiner to page 77 of this response.

Claims Rejections - 35 USC§ 103(a)

Examiner's rejections of Claims 1-5, 8, 9, 11, and 18-21 over the Sato patent in view of the Acampora patent.

10 In section 18 of the current office action, the Examiner rejected Claims 1-5, 8, 9, 11, and 18-21 under 35 U.S.C. § 103(a) as being unpatentable over Sato (US Pat. No. 4,904,993, hereinafter referred to as the "Sato patent"), in view of the Acampora patent.

15 **Examiner's rejections of Claims 1 and 18**

The Examiner stated that regarding Claims 1 and 18, the Sato patent discloses a node incorporating hybrid radio frequency and optical wireless communication links (referring to Figure 1), the node comprising: at least one optical portion for transmitting data (referring to "optical transmitter" elements 14 and 13, in Figure 1); at least one radio
20 frequency portion for transmitting data (referring to "RF transmitter" elements 12 and 11, in Figure 1); a data receiver (referring to "data supply" element 15 and "data generator" element 16, in Figure 1) for receiving data from a data source; and a controller (referring to "switches" elements 17 and 18, "control the routing of data to either RF
25 portion" element 12 or "optical portion" element 14 in Figure 1) configured to receive data from a data source (referring to element 15, in Figure 1), and connected with the optical portion and the radio Frequency portion to allocate portions of the data to be transmitted through the optical portion and the radio frequency portion (referring to column 2, lines 25-47, 51-67 and column 3, lines 1-3).

30 The Examiner further stated that the Sato patent differs from claimed invention in that the Sato patent does not specifically disclose that the optical portion generates the optical

signals by a laser, but that the Acampora patent teaches a hybrid radio frequency and optical wireless links (referring to Figure 3a), wherein the Infrared signals can be generated by laser (referring to column 23, lines 44-52 and column 25, lines 10-20).

5 Next, the Examiner stated that it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a laser portion such as the one taught by the Acampora patent, for the optical portion in the data transmission system taught by the Sato patent to generate a uniform, narrow, and relatively high power output signal.

10 **Regarding the rejections of Claims 1 and 18 over the Sato patent in view of the Acampora patent**

The Applicants **strongly** disagree with the Examiner's statement that "the combination of the Sato and Acampora patents does teach allocating portions of data to be transmitted through the laser portion and the radio frequency portion."

The CCPA stated that under 35 U.S.C. § 103(a), "In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification" *In re Lintner*, 458 F.2d 1013 (C.C.P.A. 1972). Further, the CCPA has subsequently added that the prima facie case requires that the reference teachings "appear to have suggested the claimed subject matter." *In re Rinehart*, 531 F.2d 1048 (C.C.P.A. 1976). In addition, the MPEP 2143.03 noted that to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art.

30 Independent Claims 1 and 18 of the present invention recite the limitation "a controller configured to receive data from a data source and connected

with the laser portion and the radio frequency portion to allocate portions of the data to be transmitted through the laser portion and the radio frequency portion.” The Applicants submit that this limitation is not taught, disclosed, or suggested in the Acampora patent, as previously stated on this
5 Office Action response (referring to pages 38 to 41 of this response). Furthermore, the Applicants submit that this limitation is not taught, disclosed, or even suggested in the Sato patent.

The Applicants submit that the Sato patent does not teach or even suggest
10 to allocate portions (emphasis added) of the data to be transmitted through the laser portion and the radio frequency portion, as claimed in Claims 1 and 18. **Therefore, the Applicants submit that on all the sections of the Sato patent quoted by the Examiner on the Office Action dated July 27, 2006, and reiterated above, there is not a single**
15 **mention of only allocating portions of the data to be transmitted.**

Thus, the combination of the Sato and Acampora patents does not teach, disclose, or suggest to transmit only portions of the data. The Applicants respectfully request that the Examiner indicate exactly where in the Sato
20 patent the Examiner finds that the limitation “allocate portions of the data to be transmitted” is taught, disclosed, or suggested.

Therefore, the Applicants submit that the Acampora patent in combination with the Sato patent does not teach, disclose or suggest, expressly or
25 inherently, all of the claimed limitations of Claims 1 and 18. For the foregoing reasons the Applicants believe that Claims 1 and 18, as written, are patentable over the combination of prior art references and respectfully request that this rejection of Claims 1 and 18 under 35 U.S.C. §103(a) be withdrawn.

30
Examiner’s rejections of Claims 2, 8 and 19

The Examiner stated that regarding Claims 2, 8 and 19, the combination of the Sato and Acampora patents teaches that the controller is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion and the radio frequency portion (referring to the Acampora patent column 6, lines 31-53 and column 27, lines 37-56).

Regarding Claims 2, 8, and 19, the Applicants refer the Examiner to page 77 of this response.

Examiner's rejections of Claims 3, 4, 9, 20 and 21

The Examiner stated that regarding Claims 3, 4, 9, 20 and 21, the combination of the Sato and Acampora patents teaches that the controller is configured to receive environmental information and the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the environment information (referring to the Acampora patent column 27, lines 37-56).

Regarding the rejections of Claims 3, 4, 9, 20 and 21 over the Sato patent in view of the Acampora patent

The Applicants strongly disagree with the Examiner's statement that
"the Acampora patent in combination with the Sato patent teaches that the controller is configured to receive environmental information and the portions of the data to be transmitter through the laser portion and the radio frequency portion are adjusted by the controller based on the environment information."

Therefore, the Applicants refer the Examiner to the comments above regarding Claims 29 and 42 with respect to the Acampora patent anticipating these claims. For the reasons given above, **the Applicants submit that the combination of the Acampora and Sato patents does**

not teach or disclose allocating portions of the data, a controller configured to receive environmental information, and adjusting the data transmission based on the environmental information received by the controller.

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Therefore, the Applicants submit that the Acampora patent in combination with the Sato patent does not teach, disclose or suggest, expressly or inherently, all of the claimed limitations of Claims 3, 4, 9, 20 and 21. For the foregoing reasons the Applicants believe that Claims 3, 4, 9, 20 and

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21, as written, are patentable over the combination of prior art references and respectfully request that this rejection of Claims 3, 4, 9, 20 and 21 under 35 U.S.C. §103(a) be withdrawn.

Examiner's rejections of Claim 5

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The Examiner stated that regarding Claim 5, the combination of the Sato and Acampora patents teaches that the laser portion is configured to both transmit and receive and the radio frequency portion is configured to both transmit and receive (referring to the Acampora patent Figure 3a).

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Regarding Claim 5, the Applicants refer the Examiner to page 77 of this response.

Examiner's rejections of Claim 11

The Examiner stated that regarding Claim 11, the combination of the Sato and Acampora patents teaches that the controller (referring to the Acampora patent "control processor" element 114 and "ATM switch" in Figure 3a) includes a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion (referring to the Acampora patent column 6, lines 31-53, column 15, lines 37-47 and column 27, lines 37-56).

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Regarding the rejections of Claim 11 over the Sato patent in view of the Acampora patent

5 **The Applicants strongly disagree with the Examiner's statement that**
 "the Acampora patent in combination with the Sato patent teaches that the
 controller includes a plurality of latches and a logic device, wherein
 the plurality of latches and the logic device operate to provide
10 adjustment levels for the portions of the data to be transmitted
 through the laser portion and the radio frequency portion."

 After carefully reviewing the paragraphs of the Acampora patent cited by
 the Examiner (referring to column 6, lines 31-53, column 15, lines 37-
 47, and column 27, lines 37-56), **the Applicants could not find a single**
15 **mention of a plurality of latches and a logic device, wherein the**
 plurality of latches and the logic device operate to provide
 adjustment levels for the portions of the data to be transmitted
 through the laser portion and the radio frequency portion, as
 suggested by the Examiner. Therefore, the Applicants respectfully request
20 that the Examiner indicate exactly where in the Acampora patent the
 Examiner finds that the limitation of "a plurality of latches and a logic
 device, wherein the plurality of latches and the logic device operate
 to provide adjustment levels for the portions of the data to be
 transmitted through the laser portion and the radio frequency
25 portion" is taught, disclosed, or suggested.

 For the reasons given above, **the Applicants submit that the**
 combination of the Acampora and Sato patents does not teach or
 disclose a plurality of latches and a logic device, wherein the
30 **plurality of latches and the logic device operate to provide**

**adjustment levels for the portions of the data to be transmitted
through the laser portion and the radio frequency portion.**

Therefore, the Applicants submit that the Acampora patent in combination
with the Sato patent does not teach, disclose or suggest, expressly or
inherently, all of the claimed limitations of Claim 11. For the foregoing
reasons the Applicants believe that Claim 11, as written, is patentable over
the combination of prior art references and respectfully request that this
rejection of Claim 11 under 35 U.S.C. §103(a) be withdrawn.

Claims Rejections - 35 USC§ 103(a)

**Examiner's rejections of Claims 1-5, 8, 9, 11, and 18-21 over the Zavrel patent in
view of the Acampora patent.**

In section 19 of the current office action, the Examiner rejected Claims 1-5, 8, 9, 11,
and 18-21 under 35 U.S.C. § 103(a) as being unpatentable over Zavrel (US Pat. No.
5,585,953, hereinafter referred to as the "Zavrel patent"), in view of the Acampora
patent.

Examiner's rejections of Claims 1 and 18

The Examiner stated that regarding Claims 1 and 18, the Zavrel patent discloses a
node incorporating hybrid radio frequency and optical wireless communication
links (referring to Figure 1), the node comprising: at least one infrared portion
for transmitting data (referring to "IR transmitter" element 24 in Figure 1); at least one
radio frequency portion for transmitting data (referring to "RF transmitter" element 12
in Figure 1); a data receiver (referring to "data controller" element 16 in Figure 2) for
receiving data from a data soiree; and a controller (referring to "switches" elements 20
and 22 in Figure 1) configured to receive data from a data source and connected with
the infrared portion and the radio frequency portion to allocate portions of the data to be
transmitted through the infrared portion and the radio frequency portion (referring to
column 1, lines 62-67 and column 2, lines 1-11).

The Examiner further stated that the Zavrel patent differs from the claimed invention in that the Zavrel patent does not specifically disclose the infrared signals are generated by a laser, but that the Acampora patent teaches a hybrid radio frequency and optical wireless communication system (referring to Figure 3a), wherein optical signals are generated by a laser (referring to column 23, lines 44-52 and column 25, lines 10-20).

Next, the Examiner stated that it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a laser portion such as the one taught by the Acampora patent, for the IR portion in the data transmission system taught by the Zavrel patent to generate a uniform, narrow, and relatively high power output signal.

Regarding the rejections of Claims 1 and 18 over the Zavrel patent in view of the Acampora patent

The Applicants strongly disagree with the Examiner's statement that
"the combination of the Zavrel and Acampora patents does teach
allocating portions of data to be transmitted through the laser portion and
the radio frequency portion."

The CCPA stated that under 35 U.S.C. § 103(a), "In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification" *In re Lintner*, 458 F.2d 1013 (C.C.P.A. 1972).

Further, the CCPA has subsequently added that the prima facie case requires that the reference teachings "appear to have suggested the claimed subject matter." *In re Rinehart*, 531 F.2d 1048 (C.C.P.A. 1976). In addition, the MPEP 2143.03 noted that to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art.

Independent Claims 1 and 18 of the present invention recite the limitation
“a controller configured to receive data from a data source and connected
with the laser portion and the radio frequency portion to allocate portions
of the data to be transmitted through the laser portion and the radio
5 frequency portion.” The Applicants submit that this limitation is not taught,
disclosed, or suggested in the Acampora patent, as previously stated on this
Office Action response (referring to pages 38 to 41 of this response).
Furthermore, the Applicants submit that this limitation is not taught,
disclosed, or even suggested in the Zavrel patent.

10 The Applicants submit that the Zavrel patent does not teach or even
suggest **to allocate portions** (emphasis added) of the data to be
transmitted through the laser portion and the radio frequency portion, as
claimed in Claims 1 and 18. **Therefore, the Applicants submit that on**
15 **all the sections of the Zavrel patent quoted by the Examiner on the**
Office Action dated July 27, 2006, and reiterated above, there is not a
single mention of only allocating portions of the data to be
transmitted.

20 Thus, the combination of the Zavrel and Acampora patents does not teach,
disclose, or suggest to transmit **only portions of the data**. The Applicants
respectfully request that the Examiner indicate exactly where in the Zavrel
patent the Examiner finds that the limitation “allocate portions of the data
to be transmitted” is taught, disclosed, or suggested.

25 Therefore, the Applicants submit that the Acampora patent in combination
with the Zavrel patent does not teach, disclose or suggest, expressly or
inherently, all of the claimed limitations of Claims 1 and 18. For the
foregoing reasons the Applicants believe that Claims 1 and 18, as written,
30 are patentable over the combination of prior art references and respectfully

request that this rejection of Claims 1 and 18 under 35 U.S.C. §103(a) be withdrawn.

Examiner's rejections of Claims 2, 8 and 19

5 The Examiner stated that regarding Claims 2, 8 and 19, the combination of the Zavrel and Acampora patents teaches that the controller is configured as a binary switch such that the data is transmitted exclusively through either one of the laser portion and the radio frequency portion (referring to the Acampora patent column 6, lines 31-53 and column 27, lines 37-56).

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Regarding Claims 2, 8, and 19, the Applicants refer the Examiner to page 77 of this response.

Examiner's rejections of Claims 3, 4, 9, 20 and 21

15 The Examiner stated that regarding Claims 3, 4, 9, 20 and 21, the combination of the Zavrel and Acampora patents teaches that the controller is configured to receive environmental information and the portions of the data to be transmitted through the laser portion and the radio frequency portion are adjusted by the controller based on the environment information (referring to the Acampora patent column 27,
20 lines 37-56).

Regarding the rejections of Claims 3, 4, 9, 20 and 21 over the Zavrel patent in view of the Acampora patent

25 **The Applicants strongly disagree with the Examiner's statement that**
"the Acampora patent in combination with the Zavrel patent teaches that the controller is configured to receive environmental information and the portions of the data to be transmitter through the laser portion and the radio frequency portion are adjusted by the controller based on the
30 environment information."

Therefore, the Applicants refer the Examiner to the comments above regarding Claims 29 and 42 with respect to the Acampora patent anticipating these claims. For the reasons given above, **the Applicants submit that the combination of the Acampora and Zavrel patents does not teach or disclose allocating portions of the data, a controller configured to receive environmental information, and adjusting the data transmission based on the environmental information received by the controller.**

Therefore, the Applicants submit that the Acampora patent in combination with the Zavrel patent does not teach, disclose or suggest, expressly or inherently, all of the claimed limitations of Claims 3, 4, 9, 20 and 21. For the foregoing reasons the Applicants believe that Claims 3, 4, 9, 20 and 21, as written, are patentable over the combination of prior art references and respectfully request that this rejection of Claims 3, 4, 9, 20 and 21 under 35 U.S.C. §103(a) be withdrawn.

Examiner's rejections of Claim 5

The Examiner stated that regarding Claim 5, the combination of the Zavrel and Acampora patents teaches that the laser portion is configured to both transmit and receive and wherein the radio frequency portion is configured to both transmit and receive (referring to the Zavrel patent Figure 1 and the Acampora patent Figure 3a).

Regarding Claim 5, the Applicants refer the Examiner to page 77 of this response.

Examiner's rejection of Claim 11

Regarding Claim 11 the Examiner stated that the combination of the Zavrel and Acampora patents teaches that the controller (referring to the Acarnpora patent "processor" element 114 and "ATM switch" in Figure 3a) includes a plurality of

latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion (referring to the Acampora patent column 6, lines 31-53, column 15, lines 37-47, and column 27, lines 37-56).

Regarding the rejection of Claim 11 over the Zavrel patent in view of the Acampora patent

The Applicants strongly disagree with the Examiner's statement that

“the Acampora patent in combination with the Zavrel patent teaches that the controller includes a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion.”

After carefully reviewing the paragraphs of the Acampora patent cited by the Examiner (referring to column 6, lines 31-53, column 15, lines 37-47, and column 27, lines 37-56), **the Applicants could not find a single mention of a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion**, as suggested by the Examiner. Therefore, the Applicants respectfully request that the Examiner indicate exactly where in the Acampora patent the Examiner finds that the limitation of “a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion” is taught, disclosed, or suggested.

For the reasons given above, the Applicants submit that the combination of the Acampora and Zavrel patents does not teach or disclose a plurality of latches and a logic device, wherein the plurality of latches and the logic device operate to provide adjustment levels for the portions of the data to be transmitted through the laser portion and the radio frequency portion.

Therefore, the Applicants submit that the Acampora patent in combination with the Zavrel patent does not teach, disclose or suggest, expressly or inherently, all of the claimed limitations of Claim 11. For the foregoing reasons the Applicants believe that Claim 11, as written, is patentable over the combination of prior art references and respectfully request that this rejection of Claim 11 under 35 U.S.C. §103(a) be withdrawn.

Dependent Claims

Claims 2-17 are dependent upon Claim 1, Claims 19-28 are dependent upon Claim 18, Claims 30-41 are dependent upon Claim 29, and Claims 43-51 are dependent upon Claim 42. For the reasons given above, the Applicants submit that Claims 1, 18, 29, and 42 are patentable over the cited prior art. Therefore, in addition to the reasons set forth above, the Applicants submit that Claims 2-17, 19-28, Claims 30-41, and Claims 43-51 are also patentable over the cited prior art at least based on their dependence upon an allowable base claim.

Closing Remarks:

In view of the foregoing, it is respectfully submitted that all pending claims, Claims 1-51, are in allowable condition. Reconsideration is respectfully requested. Accordingly, early allowance and issuance of this application is respectfully requested. Should the

5 Examiner have any questions regarding this response or need any additional information, please contact the undersigned at (310) 589-8158.

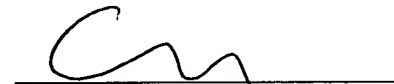
The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 50-2691. In particular, if this response is not
10 timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a), requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 50-2691.

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Respectfully submitted,

12/27/2006

Date



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